



alumni day issue

Harvard Medical Alumni Bulletin
summer 1967

Dropping the Pilot

After close to 12 years, the *Harvard Medical Alumni Bulletin* editorship again changes hands.

In 1927, Joseph Garland '19 revived the Bulletin after a 16-year lapse and placed it on its first firm foundation. He then went on to fame and glory as editor of the *New England Journal of Medicine*.

Realizing that he was soon to leave the editorship of the NEJM, the Harvard Medical Alumni Council convinced him that a spell at the helm of the Bulletin would be good medicine for him as well as the Bulletin. Happily he accepted, and on July 1, 1967 he became the 10th editor of the Bulletin.

At that time the present editor, secure in the knowledge that the Bulletin will be in good hands, retired. Leaving the Bulletin is not easy. Watching a journal grow and thrive; enjoying the appreciative response its pages have stimulated among the Alumni; and simply living with the Harvard Medical family has produced irreplaceable and unforgettable memories. But our Bulletin will continue to represent a refreshing sounding board for Alumni as well as being a mechanism for the School to reach its graduates, so that all may express themselves in areas not purely scientific or clinical, but rather in ways whereby they can maintain the breadth of pursuit that makes for the happy life of the doctor. Medical politics and community health; medical law and insurance; medical travel and hobbies and medical humor; these are the pursuits that keep the doctor from being a narrow man. May the *Harvard Medical Alumni Bulletin* always remain such a medium, that through its pages these pursuits can continue to be documented.

J.R.B.

HARVARD MEDICAL
ALUMNI BULLETIN

Vol. 41 Summer 1967 No. 5

JOHN R. BROOKS '43B
Editor

25 SHATTUCK STREET
BOSTON, MASS. 02115

PATRICIA A. MOORE
Associate Editor

JOAN F. RAFTER
Assistant Editor

MILTON C. PAIGE, JR.
Advertising Manager

10 SHATTUCK ST., BOSTON 02115

EDITORIAL BOARD

HERRMAN L. BLUMGART '21

ERNEST CRAIGE '43A

PAUL J. DAVIS '63

JOSEPH GARLAND '19

ROBERT M. GOLDWYN '56

JOHN H. KNOWLES, M.D.

JOHN P. MERRILL '42

JOHN C. NEMIAH '43B

GEORGE S. RICHARDSON '46

J. GORDON SCANNELL '40

ROBERT S. SHAW '45

HOWARD B. SPRAGUE '22

JAMES B. KAHN '67



ASSOCIATION OFFICERS

WESLEY W. SPINK '32, *President*

OLIVER COPE '28, *President-Elect*

CHESTER M. JONES '19, *Past-President*

HENRY H. FAXON '25, *Vice-President*

WILLIAM W. BABSON '30, *Secretary*

CARL W. WALTER '32, *Treasurer*

COUNCILORS

CARLETON B. CHAPMAN '41

LEONARD W. CRONKHITE, JR., '50

JOHN B. HICKAM '40

JOHN C. NEMIAH '43B

LAMAR SOUTTER '35

JOSEPH STOKES, III, '49

ISAAC MONTROSE TAYLOR '45

WILLIAM R. WADDELL '43B

CLAUDE E. WELCH '32

THOMAS B. QUIGLEY '33

*Representative to
Associate Harvard Alumni*

CONTENTS

EDITORIAL	11
LETTERS	2
ALUMNI DAY	4
HEAL, TOE AND A ONE-TWO-THREE.	5
<i>by Langdon Parsons</i>	
LACK OF LEADERSHIP IN POSTGRADUATE EDUCATION.	8
<i>by Joseph T. Wearn</i>	
THE ENVIRONMENT OF THE MEDICAL SCHOOL.	11
<i>by Sidney Farber</i>	
COOPERATIVE ARRANGEMENTS.	15
<i>by Oglesby Paul</i>	
THE CHANGING POOL OF MEDICAL SCHOOL APPLICANTS.	18
<i>by Daniel H. Funkenstein</i>	
SCIENCE, INNOVATION AND MEDICINE	23
<i>by Bernard D. Davis</i>	
THE DOCTOR IN A CHANGING WORLD	25
<i>by Leona Baumgartner</i>	
CLASS DAY	27
STAR GAZING AND DIAGNOSTICS.	28
<i>by Thomas G. Gutheil</i>	
THE GENTLEMEN OF BOLOGNA	30
<i>by John C. Nemiah</i>	
THE ETHIC OF MEDICINE	35
<i>by Robert H. Ebert</i>	
REUNIONS.	36
A POX OF GREAT CONSEQUENCE	40
<i>by Paul J. Davis</i>	
BEETLES AND BOOKS	42
<i>by George E. Gifford, Jr.</i>	
ALONG THE PERIMETER.	46
ALUMNI NOTES.	54
WILLIAM EDWARDS LADD	60
FRANCIS CHANDLER NEWTON.	61
OBITUARIES	62

CREDITS: Cover designed by Steven B. Block. Photographs:
William H. Tobey, pp. 4-18, 22-29, 35, 47; Fay Photos,
36, 39; Fabian Bachrach, 46; Cartoon by Ernest Craige,
40.

*The opinions of contributors to the Bulletin do not
necessarily reflect those of the Editorial Staff.*

LANGDON PARSONS '27
Director of Alumni Relations

DOROTHY A. MURPHY
Associate Director

© HARVARD MEDICAL SCHOOL ALUMNI ASSOCIATION 1967

Antioquia Dean Charges HMAB with Ridicule, Sensationalism, Exaggeration

To the Editor:

It was with great surprise and deep disgust that I read the article "Huelga!" (HMAB, Christmas, 1966).

In this article I found a report about a lamentable event which took place in our University, the students' strike of August, 1966. It is an article full of sensationalism, falsehoods and exaggerations, poking fun at our University and trying to discredit it in Harvard circles.

It is a matter of fact that during the past two years, the University has unfortunately had to face serious student strike movements. These lamentable events seem to have occurred frequently in all parts of the world, even in the United States—a fact we deeply regret, but which in no way has diminished in our eyes the quality of North American universities where these events have taken place in recent months.

It is completely false that a student strike occurs predictably every year in our University. In the 20 years previous to 1965, there had not been a single student strike in our Medical School. I would like to point out that it is not true that all our classes begin fifteen minutes late. It is false that our Department of Parasitology, one of the best in Latin America, does not prepare its teaching programs well in advance. It is false that our teaching staff engages in unauthorized activities outside of the Faculty of Medicine, and it is false that our University was closed by President Lleras at the end of last year. As regards this last point, it was only logical that we apply the previously existing disciplinary measures concerning student attendance by which courses are canceled with more than 10% unexcused absence from the prescribed number of classes. For this reason, 60% of the courses were canceled. The remaining 40% of courses were not canceled for the simple reason that the students attended class for the duration of the strike. It is equally false that I was tied to a chair and my hair was in no way clipped off.

I understand that it is possible for there to be a Harvard student capable of writing a sensational article full of untruths, but I cannot understand how a publication like yours could publish it, thus ridiculing our University. It is at our University that Harvard professors have collaborated in the elaboration of important research programs and have asked that we accept Harvard students during their summer vacation, feeling that the organization and characteristics of our Faculty would give excellent experience to students who might in the future dedicate themselves to public health or international medicine. We would be the first to lament the fact that the students involved in the summer program of 1966 had to suffer through the many events which occurred during the student strike. Naturally our academic programs suffered, and the Harvard students did not receive the same attention as in previous years.

In spite of the student strike, our professors tried at all times to give the

best direction possible to the Harvard students, and we put all of our facilities at their disposal to make of their visit something useful. We regret that they only lent their attention to the negative aspects of their experience.

The professors of the Faculty of Medicine of Harvard University and the directors of the Milbank Foundation, who conceived and put into action the interchange of students with our consent, must have had reasons to consider it a useful project, but these reasons were ignored and unappreciated by the author of the article.

The mutual cooperation between North American universities and those in the developing nations, as well as the mutual respect between friendly nations, has received a rude blow in your publication. We hope that you will publish this clarification.

BENJAMIN MEJIA-CÁLAD, M.D.
Dean, Facultad de Medicina
Universidad de Antioquia
Medellin, Colombia

Real Problems but Wrong Vehicle for Exposé

To the Editor:

I cannot help disagreeing with Jonathan Trobe's article and the editorial in the Christmas issue of HMAB. Even if the "Huelga!" story were entirely factual, the pages of the *Bulletin* should not have been used to wag an accusing finger at those Colombians who are presented as the villains of this story. This may be the practice in some journalistic circles, but it is entirely improper for an exchange student to turn out an exposé "for domestic consumption" of events he thought he witnessed at his host institution. Experience shows that publications of this sort can wreck a well-intentioned exchange program faster and more thoroughly than a direct hit scored by a Molotov Cocktail. I wonder, therefore, whether the author may not have been

the unwitting instrument of someone who provided him with choice items of "confidential information" for reasons of his own.

The problems described by Mr. Trobe are real enough, but I question the partisan way in which their background is described and blame apportioned. Student unrest and/or violence are common in many parts of the world. (We have seen it happen in Madrid, Moscow and Mississippi, U.S.A.). The easiest, and sometimes official, explanation for this is conspiracy, but usually there is an underlying, severe social stress, which requires a study of etiology, not merely of symptoms. This problem has occupied some of the best minds in this country and in Latin America and I submit that the best contribution we can make in Medellin is to

trust our Colombian friends with solving their own problems. During my brief visit, I was impressed with the serious idealism and social conscience of the physicians and students I met in Colombia. Their progress, achieved against a background of long-term economic depression and national anxiety deserves our fullest respect.

In this context, I was distressed at the display of editorial satisfaction with the orderly finances and organization at HMS, held up to view as if they were evidence of superior virtue. True, this School has been fortunate, but I wonder what would happen if we experienced the kind of stress which has tested other Universities, and if problems really started rolling as they have in California, or in Medellin. Perhaps, in our sense of superior achievement, we have become insensitive to the feel-

ings and needs of others. I hope that our Colombian friends will regard Mr. Trobe's criticism of their politics and coffee drinking habit with the same indulgence we are sometimes called upon to accord to our own foreign visitors and critics. We should make sure, however, that they understand the personal nature of contributions to the *Bulletin* and do not mistake them for official views.

Whatever the ramifications of this story, I hope it will help us to acquire the greater sensitivity and responsiveness we shall need if HMS is to enhance its international role, and its dialogue with foreign medical schools.

FRANZ C. VON LICHTENBERG, M.D.
Assistant Professor of Pathology
Peter Bent Brigham Hospital
Boston, Mass.

Reader Relates Fond Memories of Working with Dr. Leriche

To the Editor:

Quite by chance I came upon the Winter issue of HMAB and read Fred Jarrett's delightful article about Dr. René Leriche. I was particularly impressed because the article and pictures took me back 18 years to the time I spent studying under this very fine surgeon. It is a pity the author did not have the chance to know Dr. Leriche personally, but in reading the article I gained the impression that he had come to know him in a literary sense.

I had only recently started my surgical residency at the University of Minnesota, under Dr. Wangesteen, when the opportunity of spending time with Dr. Leriche presented itself. With Dr. Wangesteen's approval, I left for Paris in 1949 and spent the next two years at the American Hospital in Neuilly. At that time the hospital took one resident every three months and kept him for a year. During that time he worked at the hospital and had the opportunity of serving specifically un-

der any of the professors who practiced there. Professor Leriche's primary clinical work was done at the American Hospital, and the surgical ward on the third floor was occupied for the most part with his patients.

At the end of a year, I had the chance to stay longer, and thus, with Dr. Leriche's permission, I continued to work on his Service. What a delightful, modest and gracious person he was. He was then about 70, and although he scrubbed on every case, he more often than not relegated himself to the job of holding retractors rather than doing the actual surgery. The **debouche-chage** procedure known in English as endarterectomy, was quite popular with Leriche at that time. During the operations he took great pains to describe what was being done, and what he hoped was being accomplished by the surgical procedure.

The picture of Leriche scrubbing (page 25, Winter issue), looks as if it was taken at the American Hospital. It was the custom then for French

surgeons to scrub without a mask since the mask was part of the sterile operating gown. Only after scrubbing for ten minutes in sterile, distilled water, and after putting on the gown and gloves, would they deign to tie the mask behind their cap in a most unsterile area. They could never understand my reluctance to do this, nor could they understand why I wanted to use thin Latex rubber gloves. Their own, at that time, were, I am sure, several millimeters thicker than the ones to which I had become accustomed to use in this country.

My wife and I were married in Paris in the winter of 1949. Not only was Dr. Leriche present at our wedding, but afterwards he spent several hours sipping champagne. I might add, he was careful to use a little gold swizzle stick which he twirled around in the champagne to rid it of the carbonation which we, of course, had paid extra money to obtain! We still cherish the plate, done in primitive provincial French art, which he gave us for a wedding present.

W. ALBERT SULLIVAN, JR., M.D.
Associate Professor of Surgery
University of Minnesota, Minn.

They Are Remembered

To the Editor:

Dr. Sanderson's amusing article, "Down Under Much Later" (HMAB, Winter 1967), reminded me that down by the river in Brisbane, in a small, quiet park, is a monument which was erected by the friendly and grateful people of Queensland. The inscription begins, "They Passed This Way . . ." and contains a simple, dignified, warm message.

Not only that, but Sir Alexander and Lady Murphy, whose home became an unofficial 105th Club, still welcome Boston doctors as if they were all old friends, even when not of the 105th.

LUCILLE WILLIAMS
(Mrs. Conger Williams)
Milton, Mass.
Letters contd. on page 63

EVERYONE knows it never rains on Alumni Day, but this year things were different. The day before a formidable ("nothing like it in 250 years") and unpredicted northeast storm hit Boston. The tents lay on the ground in tatters, there was debris everywhere, it was wet and cold. With characteristic energy, Dorothy Murphy and her staff, manipulated a last-minute, total rearrangement of the School's facilities, which made it possible for eleven hundred Alumni and wives to be in closer (and warmer) proximity with one another than is usually the case. The Faculty Room and vestibule of Building A were frequently wall-to-wall Alumni; the familiar and still dripping tunnels to Amphitheater C in the morning, and D in the afternoon, reverberated to the leisurely tread of all who attended the sessions. In spite of a few pleas of "Are you sure we're going in the right direction?" the programs were delivered to a full house.

Chester M. Jones '19, made a surprise presentation to John R. Brooks '43B who, after 11 years, has retired as editor of HMAB. Dr. Brooks was given two specially bound tomes containing all the Bulletins for that period, and a parchment scroll inscribed "with deep appreciation from the Harvard Medical Alumni Association for his outstanding service as editor, 1956-1967." It was announced that Joseph Garland '19 (internationally known for his editorship of the *New England Journal of Medicine*, from which he has recently retired), has graciously consented to become the new editor of the *Bulletin*.

Dr. Jones concluded his official duties as the 1966-67 president of the Alumni Association by announcing the establishment of a special memorial fellowship fund "to one of the most distinguished and beloved members of the Class of 1937, Albert John Erdmann, Jr." who died two years ago. The fund has been established at HMS through the generosity of Dr. Erdmann's family; it is to be known as the Albert J. Erdmann, Jr. Memorial Fund for Clinical Medicine. Its purpose is "to perpetuate Dr. Erdmann's belief that clinicians should exemplify to the highest degree humanitarian concern in caring for the patient, and understand medicine as a calling as well as a discipline." Income from the fund will be used, therefore, to support clinical teaching, with preference being given to younger members of the School's faculty and staff in clinical departments. Members of the Class of 1937 and other friends were very happy to see Mrs. Erdmann among the audience, with her daughters and son, A. John 3d, who graduated with the Class of 1967.

Another honored guest was Dr. George Packer Berry who had been invited to take part in a special presentation to the School of his portrait and plaque, which was a gift to the Countway Library from the Alumni Association. After everyone had assembled in the foyer of the Library, the portrait was unveiled. The spontaneous applause acknowledged the skill of a great portrait artist, Pietro Pezzati, who has captured not solely the likeness of Dr. Berry but something also of those inner forces which made him a great dean of the School.

Dean Robert H. Ebert said how pleased he was to accept both gifts on behalf of the University, and that "this superbly executed portrait will hang in the Faculty Room." The marble being executed by sculpturer, Joseph Coletti, was not completed, but for this occasion Mr. Coletti had placed a plaster cast on the Countway Library wall. Dr. Ebert said, "These two works of art are particularly appropriate commemorations of Dr. Berry's deanship. Every day I realize more clearly what a remarkable contribution he made to this School." Dr. Berry, disclaiming use of the personal pronoun said, "It is not 'me' but 'we'—the faculty, alumni and everyone who worked for the School—whose achievements can be recognized here today. I am glad Lang Parsons allegorized the Bible story of Eve and the apple. What a good thing she did not throw away the core, or where would we be today? This Library is the core of a vast compilation of medical knowledge . . . there is also the new core curriculum about which Dr. Ebert and the Faculty are concerned . . . and the numerous exciting ideas being fomented in this School today which will contribute to the expansion of tomorrow's medical needs and scene."

Some of those ideas and some interesting opinions of things past were the subjects chosen by the Alumni Day speakers. They are herewith presented.





HEAL, TOE

and a

ONE-TWO-THREE

by Langdon Parsons '27

ON BEHALF of the Dean and the Faculty I would like to welcome you all home again. For those of you who have not been here for five years, this will be your first sight of the Countway Library. I am sure you are as proud of it as I am, for you helped to make it possible. This then is your School and your library.

To me the library is symbolic; for within its stacks is the greatest collection of medical knowledge in the world. I also venture to suggest that within the collective minds of the Faculty there is a store of knowledge that has not yet found its way into the literature.

You will be relieved to know that at Harvard Medical School, we really do not ask much of the student. If, however, he hopes to measure up to the standard of the graduates who have gone before him, we simply ask him to digest everything he finds in the library, extract every bit of knowledge held by the Faculty, and learn how to apply the knowledge to the practice of medicine today. I am sure you feel as I do that this relatively simple task can easily be accomplished in the four years allotted to him.

There are those who feel that the medical student of today has too much information to digest and that we should carefully analyze the curriculum and come up with a basic core of information upon which he can build his knowledge so that he can best apply it to the needs of the community. In our time in Medical School it was easy to digest the whole apple from the tree of knowledge and throw away the core. Now the core is the essential feature.

The problem is obviously not a new one. Eve had the same one which now confronts the Dean. She induced Adam to eat the apple, but in her case it is perhaps unfortunate that she saved the core, for look around and see what a mess the world is now in. I suspect the reason for our sad condition can be directly traced to Eve's ill-advised planting of the seeds within the core. There seem to be as many seeds of discord as there are of progress. Certainly the Harvard Medical School should take a good hard look at the circumstances involved in the initial explosion of the world population and not fall into the same trap Eve did.

The basic problem is how to go about constructing a basic core curriculum.

The Dean frequently stated that he wanted to have a closer relationship with the Alumni, and I am beginning to understand why he feels this way. You, by invitation, are now firmly entrenched in the role of advisors to the Dean. How then would *you* go about answering a few if not all the following questions to which he must try to find an answer:

1. With what kind of student are we being charged?
2. What and how sophisticated has been the nature of his premedical preparation?
3. Should we consider that each medical student is alike in his potential and capability?
4. What should we teach the student today, and how do we go about it?
5. What does the modern medical student want?
6. How much opportunity do you provide for the individual student with special interests and aptitudes?
7. Are we right in trying to teach him at all?
8. Would he be better off if we simply created an academic atmosphere in which he could teach himself?
9. If we are to teach him, should he be given a basic course of instruction and latitude to explore his own interests with whatever help he can muster from a Faculty advisor nearly as bewildered as he?
10. How much of the basic instruction should he receive, and how much should be left to post-graduate education in the hospitals?

These are only a few of the basic considerations involved in fashioning a curriculum.

This past year has been an interesting and exciting one. The Dean and the Faculty have spent long and thoughtful hours, some of them frustrating, discussing the problem of how best to provide an academic atmosphere and a curriculum that will come closer to meeting the needs of the future than anything else we have had before. There was nothing wrong with the way we were taught, but it simply is not adequate to meet the challenges of the future.

Do you remember the inscription on

We all want to heal; we all feel we should dance . . .

the wall of Building D?—"Life is short and the Art long. Experiment is Perilous. Decision is Difficult." It is obvious that Dean Ebert took a long hard look at that inscription. I suspect he blanched as he read it, but he still has the courage to put into operation the last two lines of that inscription—"Experiment is Perilous. Decision is Difficult."

It seems to me that the Dean wants very much to have the Medical School come down from its ivory tower, roll up its sleeves, and become involved in the basic problems, either locally or internationally, of delivering medical care to the community. Only in this way can the rapid advances of medicine become meaningful to the individual. If the Harvard Medical School is to justify its leadership, it must have practical experience in the unexplored fields of medical practice. If medical schools remain aloof, we can be sure that some other agency, in all probability the Government, will one day do something about it. The Medical School will be in a far stronger position if it has grappled with the problem, and has some idea of what the problems are.

How this will or should be done is the problem, and it is also the reason I suggest we call our effort, "Heal, Toe and a One-Two-Three." We all want to heal. We all feel we should dance, but if we are to charm our partners, the public, we must have our feet more rhythmically in a well-organized pattern.

This is not an easy task for the Dean. It is impossible for him to know all the right answers to the problems from the outset, and he must experiment. His approach is most interesting, for he has elected to set up working models from which to gain experience. This is bound to have an impact on the image of the Harvard Medical School of the future. It will inevitably broaden students' exposure to the problems of medicine today in local, national and international fields. These are areas that were not open to students years ago because they seemed to have no practical bearing on the medical education of the time. It is apparent that they cannot be ignored today.

We have attempted, in organizing this Alumni Day Program, to let the speakers direct your attention to some of the changing aspects of medical edu-

cation. I am sure that none of the speakers will profess to have the answers to the problems they will discuss, but if we have a better understanding of what we are facing, we will all have a chance of seeking solutions.

Not all the problems of the School, however, are confined to the area of the curriculum. We have financial problems too. This may be hard to believe when you think back to the recent Program for Harvard Medicine to which Alumni contributed more than \$4 million. The Program materially strengthened the Faculty and permitted the creation of several badly needed new departments of study, but there still remains the need for unrestricted money.

Too few Alumni realize that a large portion of the money donated to the Alumni Fund, which is not allocated for specific purposes, forms the bulk of this School's unrestricted fund. The importance of unrestricted money cannot be overemphasized. It is a fluid asset without which a school of this size and nature could not, for instance, successfully operate its scholarship program.

Langdon Parsons



Dorothy Murphy (right) and everyone enjoy the speech.





Dr. Ebert and Henry Meadow unveil Dr. Berry's portrait as artist, Pietro Pezzati, looks on. Below, John R. Brooks '43B, retiring editor of the Bulletin, thanks Alumni for their help.

For several years past the Annual Giving Fund has contributed two-thirds of the necessary money for the School's entire scholarship program. This is a vitally important contribution. Many of our top applicants come from families with low incomes. These students should, and indeed must, have an opportunity to receive a medical education. If however, after years of training, they are faced with many more years of repaying enormous debts, they will shy away from choosing a medical career. We can and do make it possible for all students, with the proper qualifications, to acquire a medical education without incurring overwhelming personal indebtedness. When one considers the fact that over half the present graduating class completed their college careers with the degree of summa cum laude, we can appreciate that they have the necessary and proper qualifications.

Individual students' financial needs are carefully balanced between scholarship and loans. The needs will vary from year to year. Last year the number requiring aid was 54% of the

class, and a total of \$581,000 was distributed for both loans and scholarships; \$325,266 for scholarships, and \$256,341 for loans.

It would be a wonderful thing for the School if Alumni could assume the obligation of the scholarship program in full. This is not as farfetched an idea as it might seem. Loyalty to the School, as expressed through annual giving is magnificent, but still the average gift hovers around \$50. We are concerned, too, with the percentage participation. Last year it dropped to 62%. Although we have already improved on last year's figure, it may still fall short of the 69% we reached in previous years. I would like to see Alumni participation pass the 70% figure. This may seem a bit like the four minute mile—everyone said it could not be done, but it has and repeatedly. With your backing and enthusiasm I firmly believe we can raise Alumni participation and in so doing, raise the average annual giving gift.





Drs. Ebert, Castle and Wearn.

Lack of Leadership

in

Postgraduate Medical Education

by Joseph T. Wearn '17

A GLIMPSE into the history of medical education may help us understand why some of the problems that medical educators are facing today are of such long standing. It has been found over the years that once a system of medical education was established, it tended to become more and more firmly fixed so that to change it required almost superhuman effort. Medical educators and practitioners resented and resisted change. The apprenticeship system, for instance, which came to this country with the colonists in the 17th century, persisted with little change well into the 19th century, for at that time, 80% of the practitioners in America had never been in a medical school. And, in the medical schools, once a curriculum was set up few, if any, changes were made in it.

It is not surprising, therefore, that forces outside medicine were required to bring about progressive, if not revolutionary, changes in medical education.

In this school, for instance, when Charles W. Eliot became president of Harvard in 1869, he began immediately to attend the medical faculty meetings, and in his first annual report stated, "The whole system of medical education in this country needs thorough reformation." When he tried to bring this about at HMS he of course ran into the most stubborn resistance from the faculty. Oliver Wendell Holmes, then professor of anatomy, reported at a faculty meeting that the professor of surgery remarked, "How is it, I should like to ask, that this faculty has gone on for 80 years managing its own affairs and doing it well—for the medical school is the most flourishing department connected with the college—how is it that we have been going on so well in the same orderly path for eighty years, and now, within three or four months, it is proposed to change all our modes of carrying on the school—it seems very extraordinary and I should like to know how it happens?" Eliot replied, "I can answer Dr. Bigelow's question very easily. There is a new president."

Before Eliot began to put through his reforms, the only admission requirement was payment of a fee. Many of the students could scarcely read or write. Three winter terms of four months each made up the entire course. Lectures and courses were haphazard and repetitive. All examinations were oral, and the student was required to pass only five out of nine to get a diploma which entitled him to practice. Eliot put in entrance requirements, increased the three

terms from four to nine months each, made the courses progressive, and required written examinations, all of which the student had to pass. Resistance to these changes was stubborn indeed, and members of the medical faculty enlisted the support of their patients and friends in Boston and Cambridge. I cite this as an example of the resistance of medical educators to change.

The second outside force that brought about revolutionary changes in medical education was Abraham Flexner's report in 1910. His study resulted in the closing of most of the commercial and proprietary medical schools; in the establishment of formal relationships of medical schools to their universities; in improved school and hospital relationships; in a marked rise in standards; in the establishment of a scientific base for medicine, and the beginning of substantial financial support of medical education by foundations and generous individuals. In short the Flexner report initiated

Glen R. Leymaster '42,



the renaissance of medical education, and prepared the medical schools for the beginning and rapid increase of medical research. Here again, a force outside medicine brought about an epochal change in medical education.

World Wars I and II next brought into focus the shortcomings of medical education, established beyond doubt the need of a research program, and a reappraisal of undergraduate medical education.

This time medical educators began to look at the medical curriculum, its content and methods of education, with the result that following World War II, several schools undertook experiments in medical education and more recently many schools have begun reappraisals.

Thus, in undergraduate medical education, the schools enjoy firm university connections and the academic standards that go with them. Their emphasis is on education, research and perhaps to a lesser degree today, on patient care. Corporate responsibility in conducting these programs is furnished by the faculty. In most of the 94 medical schools, there is fair agreement on basic principles, and many are coming to recognize the need for continual reexamination of educational methods and of curricular content.

In contrast to this comparative orderliness of undergraduate medical education, with its well-defined goals as carried out in the medical schools, I want to discuss graduate medical education, as conducted in the internships now offered by more than 800 approved teaching hospitals where the organization, control, and educational content vary tremendously. Medical schools curricula and teaching methods are the responsibilities of corporate groups—the faculties—whereas the educational content and service load of internships are the responsibilities of a single service or, in many instances, of a single individual, usually the head of a hospital service. Thus, the student jumps from the medical school, devoted to education, to internship in a hospital devoted primarily to medical care. The educational content

may be well planned and efficiently carried out in some hospitals, but in others, the service load may be overwhelming and the duties menial.

Straight internships are increasing, while the rotating internships are decreasing, chiefly because of the marked improvement of clinical clerkships in many schools. The rotating internship becomes repetitive and in many instances, it is not as good as a clerkship.

Formerly, it was the exceptional young physician who followed his internship with a residency, but now nearly all take three years or more of residency training. Despite this, there is no uniformity in internships, and they bear little relationship to the residencies.

Internship programs are reviewed by the Internship Review Committee which is responsible to the Council on Medical Education of the American Medical Association. On this Committee are representatives of the Council on Medical Education, The Association of American Medical Colleges, The American Hospital Association, The Federation of State Medical Boards, and the field of General Practice. In order to get approval, the quality of the educational content in the internship must meet minimal standards. Certainly, the makeup of this committee is a diverse one, and the qualifications of some to judge educational content might be questioned.

Inasmuch as the majority of physicians now take three or more years of residencies, the number of residencies has increased greatly. In 1927, there were one-third as many residencies as internships; now the ratio is reversed with three times as many residencies. Thirteen hundred hospitals now offer residencies. One-half of a physician's education today, therefore, is spent in institutions devoted primarily to medical care and where devotion to education may vary tremendously.

The increase in the number of residencies has largely resulted from the marked increase in the specialties and the desire on the part of young physicians for certification by a specialty board. In 1945, 1,308 candidates were certified by the boards and in 1965, 5,386 received certificates. With this rise in the number of specialists—and it is continuing at a rapid rate—there has been a concomitant decline in the number of physicians who go into internal medicine or pediatrics, or those branches that devote themselves to the comprehensive care of patients. This decline is serious, and if the trend continues, it will become critical.

Internship programs are the responsibility of individual services or heads of services, who have no corporate responsibility for the hospital. (A great difference from medical schools where the faculties take corporate responsibility.) In residency programs, the division of responsibility is even greater, for it is carried on in twenty-five recognized specialties. Responsibility for approving these programs is divided among nineteen independent residency review committees, each of which includes some members appointed by the Council on Medical Education, and some by the appropriate specialty board. Each review committee owes its fealty to its specialty board, and the specialty boards are autonomous. There is no agreement or consistency among the residency review committees, and there is no relationship in the planning and control of the residencies to that of the internships they follow.

moderator of the morning program.



The fragmented responsibility for offering and directing internships and residencies is only equalled by that for appraising and approving them. As a result, the whole organization is complex, with multiple unrelated parts, inefficient and inflexible.

These remarks are directed at the overall picture of graduate medical education. There is no doubt that specialty boards for the most part, have contributed to raising the standards in their respective disciplines, but certainly the membership on the individual boards rather than any overall goal or plan for reaching it in graduate medical education, deserves the credit for their contributions.

The lack of leadership, organization and defined goals in graduate medical education exists today at a time when:

The mass of medical knowledge is growing at an ever increasing speed, as a result of our burgeoning research program;

When the program for the delivery of comprehensive medical care and the maintenance of health is lagging seriously;

When fragmentation of the profession into specialties is on the increase, resulting in an alarming decrease in broadly trained physicians who devote themselves to care of patients.

In short, effective, coordinated, and responsible leadership is urgently needed to meet the problems mentioned, and many others in the making.

What is to be done to bring about a change? It is obvious from the very nature of the organization that it can not change itself.

It was for this reason that the Citizen's Commission was appointed to study and make recommendations.

Since one-half of a physician's education is in the graduate period in hospitals one might ask:

Why haven't medical schools an obligation to play more of a role in the graduate period? Why, especially in University Hospitals where the staff is actually the clinical members of the faculty, does the medical school not exert more influence through them?

Why shouldn't the organization and control of internships and residencies be the responsibility of the whole clinical faculty, acting as a corporate body and as a subcommittee of the whole faculty, rather than the responsibility of each clinical faculty member as an individual?

Why are there no significant research programs in graduate medical education such as those that have been carried on at the undergraduate level?

Why do we not find research programs in medical care in the hospitals?

What if the trend toward specialization and away from training for comprehensive medical care continues?

There are many causes for this but the fundamental one is that students in American medical schools today do not have the opportunity to see exemplary medical care being delivered by broadly-trained practitioners. Medical schools do not have facilities for comprehensive clinics, nor have they given due recognition to those interested in advancing medical care.

You will be interested to know that this problem has a high priority on Dean Ebert's list, and his outstanding staff is already advanced in their planning. It is my belief that if Harvard sets the example, the rest of the schools and their affiliate hospitals will follow.

Finally, how can effective leadership be brought into graduate medical education?

The Citizen's Commission has recommended "... that a newly created Commission on Graduate Medical Education be established specifically for the purpose of planning, coordinating and periodically reviewing standards for graduate medical education and procedures for reviewing and approving the institutions in which that education is offered."

The purpose of this proposed agency would be to reduce the independence of a number of existing bodies, in order to achieve a more effective and flexible coordinating organization. It must be established by the voluntary action of the medical profession, and must have the confidence and support of the profession and of the public. Its responsibility should be to the profession as a whole, and not to individual groups within it.

There is full recognition that it will be difficult to bring about the establishment of such a commission, and to do so will require a high order of medical statesmanship. But, the complexity and fragmentation of the present system is such as to make change difficult to effect and this, at a time when the continuing infusion of new knowledge makes continual change imperative.

The Council on Medical Education, and a number of devoted medical educators deserve credit for the fact that the present clumsy system has worked as well as it has, but a new commission should make their task an easier one.

These are but a few of the problems facing medical educators, but they must be faced by the profession or forces outside it will step in and take over.



The Environment of the Medical School



THE assignment given to me by my respected classmate, Langdon Parsons, to discuss the Environment of the Medical School, presented at first a formidable problem of selection. It was while pondering over the direction these remarks would take, that my introduction was given to me at an American Cancer Society meeting a few weeks ago. A young man—he will celebrate his 25th reunion next year at this school—came up to me and reminded me that I had been one of his teachers. Such reminders and the discussions which follow, constitute the most precious reward a teacher can have. He recalled that in one teaching exercise concerning the problems presented by a newborn baby, I had used the term “intra-uterine Nirvana.” This he remembered, and liked so much that when he had the opportunity to build a weekend hideaway, he called it “Nirvana.” I wondered on my way back to Boston, just how a man in my field had come to use such a term in a teaching session, and at last, depending on the well-known retention of old memories, at a time of life when events of last week are less well recalled, I reconstructed the incident. I must have been talking about the cause of the post-maturity—why some infants remain in the uterus 2 or 3 weeks past the expected date of delivery. Lacking any satisfactory scientific explanation at that time, I must have taken refuge in a psychiatric explanation, which ill became me. The fetus just didn’t want to leave

its haven of safety and repose. It occurs to me now that this situation may be contrasted with the explanation that Sir Joseph Barcroft of the University of Cambridge, gave years ago for the cause of the first breath of the newborn baby. He described the consequences of the mounting carbon dioxide level and the diminishing oxygen supply as the end of pregnancy approaches, until finally, in his words, “It gets so stuffy, the fetus moves out.”

I am confronted at once, since I brought up these two images, with the need to explain why, for some, Harvard’s environment may prove to be too stuffy, while for so many others, including our own graduates, Harvard has proved to be the Nirvana so many seek. The latter situation may not be entirely good, particularly if it leads to too much contentment and self-adulation, both of which may be regarded as lethal genes for productivity. I am better fortified by one of the definitions given by Webster for environment—“the surrounding conditions or forces that influence or modify.” Within the framework of this definition, I shall refer in part to the environment of Harvard Medical School. Whenever delicacy or prudence dictates, I shall take refuge in generalization concerning *all* medical schools.

It is now more than 60 years since President Eliot accepted the magnificent buildings of the Harvard Medical School that we all knew and have today, and the funds accompanying

them, and I quote "the largest single addition to the resources of the University which had ever been placed in the hands of the corporation since it received its Charter in 1650." He emphasized that the school was dedicated to teaching and to research. He then pointed out that the medical profession must take up with new ardor the work of preventing approaching disease, in addition to the work of treating disease arrived, and that the profession must recognize that health is eminently a social problem. Wonderful words, these in 1906, clearly describing the goals of the Medical School in the broadest possible terms and foreshadowing President Pusey's decision in 1965 to appoint a Dean who would carry the Ivory Tower into the community, as an earnest expression of Harvard's intention to make a maximum contribution to the health of all people.

My old, still young teacher, Dr. Wearn, who was an instructor when I was a second year student, mentioned in his speech President Eliot's impact upon the University. Members of my Class of 1927 will recall with me the awe-inspiring presence of Mr. Eliot at the age of 90, straight as a ramrod, when he graciously consented in 1924 to talk to the student body. We actually heard Mr. Eliot say that in 1869 when he asked why there were no written examinations in the Medical School, he was told reluctantly that the oral examinations were necessary because so few of the students could write. This picture is as vivid to me as the day that we saw Mr. Eliot standing in the front of this auditorium.

I would like to say a few words about two aspects of the changing environment of Harvard Medical School. These have to do with research, which has grown so enormously from the time in 1929 when our distinguished teacher, Dr. Lewis Bremer, recorded the fact that 60 senior members of the faculty were carrying on research—a few more of younger people and some 30 fellows. Today, the Harvard Corporation has the names of almost 3,000 people on the roster now carrying out teaching, research, patient care and other activities within the Medical School. This enormous increase came not from within—we were prepared at Harvard, as many medical schools in the country were prepared. It came because the federal government recognized that research concerning prevention of disease and cures, represented a public need of such enormity that large sums would have to be appropriated. Dr. Berry in one of his Annual Reports a few years ago, recalled that in 1940, all the medical schools in the country put together, spent only three-and-a-half million dollars for research. There are many medical schools in the country, each one of which alone allocates far more in support of research. In Harvard Medical School a few years ago, the Affiliated Hospitals and the Medical School itself used \$25,000,000 of Federal money, matched by \$5,000,000 from all other sources in support of the activities in the school. This enormous increase in funds available for the support of medical research did a great deal to help medical education too. Only recently have medical educators actually sought support from Congress for medical education in its own right, using reasons which are much more precise than those when research funds are used to support the educational enterprise to such an extent. The tremendous increase in the availability of funds from the National Institutes of Health from \$3,000,000 in 1945 to over one billion-and-a-quarter this past year, with \$900,000,000 going to the universities, research institutes, and teaching hospitals and other hospitals in the

The Class of '27 will recall

country, was pointed out just two days ago at the Centennial of the Dental School by the man who has done more for the health of the people of the world than any layman alive, Senator Lister Hill. This has had a great impact on Harvard Medical School, and not all of it could be absorbed at once. There have been protests of many different kinds, that research was interfering with the educational enterprise. This, I have never believed. We have almost 3,000 people of various ages on the faculty or on the teaching force. There are only 550 or so medical students, and the competition for the student minute, not the student hour, is so great that there is actually a lack of opportunity to teach, on the part of many on the faculty, because there just isn't enough student time to permit all the teaching that could go on in a school of this size and eminence.

I would like to speak concerning one other matter of great importance which affects the environment of the Medical School now, and will have a great effect in determining the course of the future of this School. This concerns the problem of the strength of departments and the emphasis, I will say the overemphasis, on the prerogatives of the department.



Mr. Eliot speaking to us.

In a beautiful tribute to the late Alfred North Whitehead, Justice Felix Frankfurter, now gone too, spoke of the "curse of departmentalization" as the greatest obstacle to the achievement of the full potential of universities. I know what he meant. I see it in every medical school with which I am familiar, and with many universities. The departments of this Medical School, representing the disciplines basic to clinical medicine and surgery, required great increase in strength after World War II. This they received with soft money from the federal government in huge amounts, far beyond their wildest imagination. In this School, this was finally put on a firm basis by Dr. Berry after a successful campaign for the support of Harvard Medicine. These departments have been strengthened to such a degree that I hope the time has come when they can look, not only at their own needs and interests in their own part of the Medical School, but just as broadly at the needs and requirements of the Medical School and the University as a whole.

I say this here because these words need to be spoken. What I say about Harvard applies to every school about which I have knowledge. It is clear that the knowledge in any one discipline is increased not solely by those who work in

that discipline. It is clear, also, that in teaching, some of the finest work is done when we cross the disciplines. In many forms of research today, the only possibility of making great progress comes when we cross the boundary lines of departments—cut across all of them—biochemistry, microbiology, physiology, pathology—the various clinical fields. The best example I can give you is the requirement for great and rapid progress in the field of cancer today. This can come about only if there is a meaningful effort on the part of those in the sciences basic to medicine, highly motivated by the desire to make progress against a dread disease, and if their efforts can be joined with those in the clinical disciplines who work either in the laboratory or only at the bedside. Far greater progress will be made than can ever occur if we leave this merely to chance and to the efforts of individual scientists who may continue to work alone if they choose to do so. What I am thinking of here, then, is the universality of structure of the medical school and the university. There should be room within any university or any medical school for teachers, doctors, and scientists to carry out their activities in a number of different ways. It is the inflexibility which accompanies the tremendous strength of departmentalization about which I am speaking at this moment.

What is important in any medical school is a search for truth, not the name of a department—the opportunity to achieve goals of science or medicine, not the academic discipline or category—the saving of human life and prevention of suffering, not the struggle for academic power—the achievement of harmonious collegial working relationships and the creation of patterns and standards of excellence, not the preservation of tables of organization. There is need for more frank communication of plans and goals throughout all universities and all medical schools.

Dean Ebert is beginning to make great strides in enlarging the environs of Harvard Medical School to include the community. He became Dean just after the President's Commission on Heart, Cancer and Stroke had made its historic recommendation to President Johnson, for the creation of complexes or centers for the diagnosis and treatment of these dread disorders, and for the generation of new knowledge concerning all aspects of these diseases through research, including clinical investigation on a scale badly needed, but never possible heretofore because of lack of resources. These complexes, presently diminished by political chicanery, to the term "Regional Medical Programs," are to incorporate also demonstrations, continuing education, and all other studies required to bring every doctor on behalf of his patients, and to all patients without doctors, the benefit of all the knowledge of medicine, surgery and laboratory science available today. These programs were designed for patient care and research and were defined by law as disease-oriented enterprises. (We shall hear from Dr. Paul about the opportunity never before at hand for cooperative enterprises between and among all of the medical health related governmental and private enterprises in a given section of the country.)

It has been estimated by experts in the field of cancer, and I choose this as an example, that if all the knowledge presently available in the institutions of greatest knowledge and experience concerning diagnosis and treatment of cancer could be applied to every man, woman and child in the country with cancer today there would be a saving of 100,000



lives of the 300,000 destined to die of cancer this year. Some regions of the country responded immediately to what has been called the greatest opportunity in the history of health activities in this nation. It is regrettable, that in several parts of the country the patient, in whose behalf the entire program has been instituted, has been pushed aside in favor of surveys of the distribution and delivery of medical care, development of programs of continuing education and the like. Such activities, of course, are essential to the complete success of the Heart, Cancer and Stroke Program. It is impossible, however, to find logic or reason for the years of delay in applying what we now know to the millions in the country who could benefit by immediate concentration on the patient in accordance with the intent of the law. Here is required vision, courage, knowledge, thinking on a broad scale, and talent in moving on several fronts at one time. It is unfortunate that in many regions, the faculties of the medical schools have not yet been brought actively into the planning of these regional programs. This is a costly mistake, and the price can and will be measured in human life.

The Dean of Cornell Medical School, Dr. Deitrick, wrote this month a paper in which he raised the question whether the medical school should take on this tremendous responsibility. He stated that it should not be the goal of a medical school to become a colossus which dominates all of the medical research and medical care. The question has been raised repeatedly in the last few years—Is the medical school or the university the best place for large integrated programs of medical research and clinical investigation of disease-oriented nature, or, for example, of vast, badly needed centers of toxicology and pharmacology? It is here that the definition of the environment of the medical school will give the answer, as is the case also with these Regional Medical Programs. The obvious answer in relation to the Heart, Cancer and Stroke enterprise, lies, as it should in the development of new and meaningful relationships with the community hospitals. We must not forget that thousands of well-trained graduates of our great medical schools and teaching hospitals spend their lives in these community hospitals and are capable of professional activity of the highest degree of excellence. It is obvious that not all patients can or should be cared for in the teaching hospitals, which are closely affiliated with medical schools. These schools, however, will lose their opportunity for the setting of standards, for making the greatest possible contribution to the health of all people, if they do not rise to this great challenge. Now is the time for all medical schools, for all doctors in teaching and community hospitals alike, and all agencies concerned with health, to study once again, the provisions of the law and to push ahead without further delay to achieve the goals so clearly defined in behalf of patients.

The Surgeon General of the United States Public Health Service, Dr. William H. Stewart, has just proposed a third faculty for medical schools, to be added to the faculty of teaching and the faculty that carries on research. The third faculty would be oriented to the community, and the community would serve as its classroom and laboratory where students would be prepared for medical practice in the community away from the medical center. It is clear now that enterprises of community medicine will require more people. I would not use the term "third faculty," nor would I have separate faculties for teaching and for research. May I return

once more to the need for universality in the conception of the medical school's mission, goals and structure. There should be room for those who want to teach and do little research. There must be room for those who want to care for patients and do little clinical investigation. There must be room for those who cannot teach, except in post-graduate manner, but who have so much to offer in basic research, or in the various aspects of clinical investigation. Research may be carried out, as the late Boss Kettering defined it, by basic scientists who work on projects which do not have to come out *right* or *wrong*. Or research can be carried out for the achievement of specific goals set by the needs of sick human beings, by scientists and doctors who work alone or in large, carefully organized, interdisciplinary forces. Not all medical schools need follow the same pattern. If there is no willingness or ability to take on these large responsibilities of making progress in the solution of the problems of the disease, the medical school should lend all the support it can to affiliated institutions which are set up for such specific purposes and which could profit immensely by strong and meaningful medical school or university relationships, so lacking in most parts of the country.

The ideal environment for Harvard Medical School is one that will permit the achievement of many different goals, sharply defined and clearly visible. In the achievement of the goals of Harvard Medical School, the bringing together of teaching hospitals which can gain strength by closer affiliation or relationships is an important step. If we are to follow faithfully the principle that unnecessary duplication must be abolished or prevented, we would require new and vastly improved administrative arrangements. The application to the affiliated hospitals of Harvard's tradition that every tub must rest on its own bottom, should be maintained, for the Harvard affiliated hospitals should not become the economic responsibility of the Medical School. But this in no way should prevent their leaders from coming together in truly cooperative planning and execution. Freedom there must be for the individual development of hospitals and the institutions affiliated with medical schools, if we are to make the kind of progress that can take place only where freedom flourishes and where men of special ability or unusual motivation choose to create something new that might not reach the drawing board of the central planning group for many years to come.

I believe that the preservation of the independence and integrity of affiliated institutions can be maintained if truly enlightened leadership in the administration of any medical school brings together all health related enterprises. This, in our case, must and will be under the Harvard Banner. I plead here for the unity of Harvard Medicine, centering as it must in the Medical School, with administrative arrangements with all affiliated and other institutions in the Harvard environment so skillfully woven and executed that in fact there will be the opportunity both for total growth, and growth of the individual components of the whole. Only then will the full potential of this extraordinary environment at Harvard become available. Only then will Harvard achieve its full greatness in its contribution to education and medical research in behalf of the human beings for whose welfare Harvard Medical School was created.





Cooperative

Arrangements

by
Oglesby Paul '42

WHEN Public Law 89-239 entitled Education, Research, Training, and Demonstrations in the Fields of Heart Disease, Cancer, Stroke, and Related Diseases was passed by the 89th Congress, the key sentence in the legislation was, "Through grants, to encourage and assist in the establishment of regional cooperative arrangements among medical schools, research institutions, and hospitals for research and training (including continuing education) and for related demonstrations in patient care."

As I think back to my four years in medical school, and to the students I have taught in three medical schools since that time, I am conscious that the broad concept of cooperative arrangements in medicine has had minimal to no exposure by most of us. I believe this concept, and extensions of it, needs a great deal more emphasis, beginning at the schools themselves. Such a concept has the potential of transforming American medicine for the better.

Understandably perhaps, the physician tends to consider himself a bit apart, and above, the rest of society; others should come to him, he need not solicit their cooperation. In some measure, this is an inheritance of the image of the great family physician of the 19th century. Robert Louis Stevenson wrote: "There are men and classes of men that stand above the common herd; the soldier, the sailor and the shepherd not unfrequently; the artist rarely; rarelier still, the clergyman; the physician almost as a rule. He is the flower (such as

it is) of our civilization; and when that stage of man is done with, and only remembered to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race."

In some measure this is a result of the possession of a special training and knowledge of a special language that separates the doctor, or group of doctors, from others who are presumably less advantaged. In some measure, it results from a pose of superiority cultivated consciously or unconsciously to create an aura of a unique and untouchable place in society or within medicine itself.

A cooperative arrangement is present when a medical student interviews and examines a patient. The student learns in the process, and quite commonly by his thoroughness and detail and lack of too many preconceptions, contributes to the patient's welfare. The patient makes a sizable contribution by being available and participating willingly and helpfully in such an exercise. There is almost always mutual recognition that this is a useful cooperative arrangement.

Such a relationship is readily achieved in the field of medicine, but in surgery it is much more difficult to carry through to the stage of the incision itself. As the clinic type patient becomes a lessening segment of the hospital population, it is well for each of us to recognize the fundamental nature of this cooperative arrangement; to make sure it is

understood by the student, and not concealed from the private patient. The whole matter of informed consent by the patient who is receiving an experimental form of study or treatment, acknowledges the existence of this same principle. An understanding by both parties of the cooperative and mutually beneficial nature of the undertaking is in the best interests of medicine and of society.

A difficult and often touchy area is that of the relationship between a medical school and its teaching hospitals. If ever there was a cooperative arrangement with an obvious advantage to both sides, this should be it. In many parts of the country, however, it continues to be a relationship clouded by rigid postures, misunderstandings, veiled, and not so veiled, suspicions. In some centers, the word cooperation is about as unsuitably applied as to Hanoi and Washington. In others, the problems are modest and readily managed.

The answer to this situation surely comes from two sources—enlightened leadership and good communication. Benefits to both sides are so obvious that only a minimum of exhortation should be required. But, the narrowness engendered by the tradition of an institution, self-sufficient within four walls, still requires a countering force in clear-headed direction by university presidents, deans, department chairman, division chiefs, presidents of hospital staffs, and chairmen of hospital boards. It is perhaps because of the multiplicity of these distinguished and involved personages that there is such ample opportunity for misunderstanding and misconceptions in the development of medical centers. This is one of the fundamental and basic cooperative arrangements.

As the requirements for diagnosis, treatment, and research need increasingly specialized competence, expensive and complex equipment, and custom-designed facilities, the rationale for the development of medical centers can only become more painfully apparent. Good communications is in itself, the most considerate, the most diplomatic, and the most effective approach.

When Public Law 89-239 was passed, it was viewed by many harassed leaders and authorities in medical schools much as Charles Lamb described a poor relation—the one thing not necessary in life. The reaction among the five medical schools in Chicago ranged from the I'll-worry-about-it-when-I-have-to attitude, to frank dismay. The problem posed by the scarcity of professional personnel is a genuine and proper concern. The problem posed by the opportunity and necessity for cooperative arrangements between medical centers, and unaffiliated near and remote hospitals and practitioners, was largely the medical schools' own doing.

The schools in Chicago, and in many other areas in our nation, were pathetically ill-prepared in their thinking for extending their influence into the medical community. Likewise, the medical profession, and the many unaffiliated hospitals, were aghast at the thought of a medical center getting its foot in the door of their cozy and seemingly satisfactory establishment. When one of the Chicago schools ventured a preliminary meeting with a group of nearby, and hither-to disdained hospitals, it met a decided, and probably deserved, rebuffing. In the future, both sides will have to do better. It is greatly to the credit of the deans of the five medical schools who, after an initial period of mixed disinterest and anguish, worked together admirably and effectively to mount a planning program. This should be a good example to other areas in

the country including New England.

The leaders of the medical society have also as assumed constructive and helpful attitude. It is too early in Illinois to say whether the five schools, all situated in the Chicago area, and the many hospitals and physicians extending south to the Kentucky and Missouri borders, will in fact forge links of an enduring nature. However, if each side realizes that it is in a position to contribute and that this is a truly cooperative arrangement, we may see enormous benefits accruing to our people in improved service and improved standards. In this instance, the law is very flexible and grants much local autonomy and responsibility for success. This rests with every physician and every community. We are in a position to draw up our own program and make it work.

Finally, I want to discuss cooperative arrangements between medical schools and organized medicine. I have been unhappy with the narrow viewpoint of certain of the leaders of our AMA. I recall having lunch in Chicago four years ago with one of the top men in the organization. I suggested a rapprochement with the government, only to be told that there was no need for this, as the AMA had all the votes lined up in Congress for any future encounter. Those of us who did not wish government controlled medicine, but also sincerely believed that full discussion and an attempt at an accommodation by both sides were needed, were dismayed. The subsequent resounding defeat of the AMA over Medicare did none of us any good as regards public relations. It is fortunate that the current leadership has been far more conciliatory.

There is, however, need for a cooperative arrangement, not only between organized medicine and government, but also between the medical schools and organized medicine. In general, the practitioner has been on the right in his political and social philosophy; the academician on the left. Now, both views need to be expressed within the framework of our medical societies. That the practicing groups, holding no medical school appointment, far outnumber at this time those affiliated with teaching centers should not dishearten the latter. Those of us who have positions of responsibility in medical schools must not regard our medical societies as unworthy of our efforts. We must support and reward our colleagues who unselfishly take on national or local obligations in these societies. It would indeed be wise if each medical school recognized that it is to its own interest, and the interest of American medicine, to have a strong representation of faculty members in both local and national units of organized medicine. A notable Chicagoan, and one who rose to the vice-presidency of the U.S., Charles G. Doyle, said 31 years ago, "If you work in a profession, then in heaven's name, work for it. If you live by a profession, live for it. Help advance your co-workers, respect the great power that protects you; that surrounds you with the advantages of organization; that makes it possible for you to achieve results. Speak well for it, stand for it."

It is my conviction that medical students, faculty members, and the officers of hospitals and the schools themselves, must be more conscious of their responsibility and obligations for making not token, but effective new and broader cooperative arrangements with a manner not of superiority, but of humility; with an attitude not of condescension, but of profound and true interest; with a sincere desire to establish not unilateral, but whatever mutually satisfactory cooperative arrangements may be beneficial to patients.



THE recent rapid social changes in our society, the revolutionary alterations in education, secondary and college levels, as well as the accelerating movement toward new modes of medical practice, have produced profound differences in the students matriculating at the Harvard Medical School today, as compared with those entering in the past.

The Changing Pool of Medical School Applicants

by Daniel H. Funkenstein, M.D.

Differences in Preparation Classes of 1962 and 1971

The three most important measures of students' academic preparation are: 1) The extent to which they studied college level courses in secondary schools. 2) The extent to which they studied courses for science majors in college rather than the less rigorous courses designed for pre-medical, pre-dental and pre-nursing students, or, for students to fulfill their distribution requirements. 3) The extent to which they studied graduate courses while in college.

Three times as many students in the Class of '71, as compared with the Class of '62, received advanced standing or placement on entrance to college for college level science

courses studied in secondary school—19% versus 58%. An additional 15% of the Class of '71 had advanced standing for non-science courses.

Such students were permitted to take more advanced courses, and members of the Class of '71 availed themselves of this opportunity. There is a marked increase in the percentage of the class studying courses for science majors as compared with the Class of 1962. This increased in biology from 30% to 88%; in chemistry from 25% to 76%; in physics from 10% to 45%; in mathematics from 40% to 91%.

If students studied more advanced courses in college, it became possible for them to study graduate courses while still undergraduates. Twenty-four per cent of the Class of '71 took one or more graduate courses, as compared with 5% in 1962. The most frequently studied graduate course was biochemistry.

Classification Based on Preparation

Another important way to study differences in scientific preparation is to classify the students within each class on the basis of their areas of concentration. This cannot be accomplished by categorizing students by their "majors," since this may not indicate the field which they studied in depth. For example, the transcript of a student whose designated major was "social relations" showed that he was primarily interested in the use of computers in behavioral science. He completed four years of college mathematics, three years of physics, and many courses in computer techniques. He was therefore placed in the category of "physical scientist," which includes majors in mathematics, physics and engineering.

Figure I shows the differences in the classification of the Classes of 1962 and 1971 based on their field of concentration. It will be noted that there is a marked increase in biologists and physical scientists, a decrease in organic chemists, and an absence of pre-medical majors in the Class of 1971. In contrast, almost 30% of the Class of '62 were pre-medical majors.



This study was accomplished by grants from The Commonwealth Fund and The National Fund for Medical Education. The splendid cooperation of the Classes of '62, '63, and '70 is gratefully acknowledged.

A comparison of the two classes by the number of semesters of each of the basic sciences studied shows some increase in each science, with the most marked increase in mathematics.

The data show clearly that the members of the class entering this fall are vastly better prepared in science than those who entered in 1958. Much of the improved preparation is due to expanded opportunities to study more rigorous modern courses in both secondary schools and colleges. Unfortunately, the marked improvement in secondary school and college courses does not apply to a majority of colleges, so there are great differences in preparation among students today, depending upon the institutions from which they graduate.

This generation of students is also markedly specialized in their preparation. The classification data show that they study more courses in their major fields, and that their electives are in narrower fields. The disappearance of the pre-medical major, an experience in general science, is further evidence of this.

The increasing specialization of students poses a major problem for medical schools. It is no longer possible to teach adequately, in the same course, physical scientists with fine quantitative backgrounds and little biology, biologists with little quantitative background, chemists with little biology, and non-science majors with minimal science preparation. If, in addition to the differences in preparation, consideration is given to the multiplicity of careers open to these students, it becomes obvious that a multi-tracked system must be designed for medical schools.

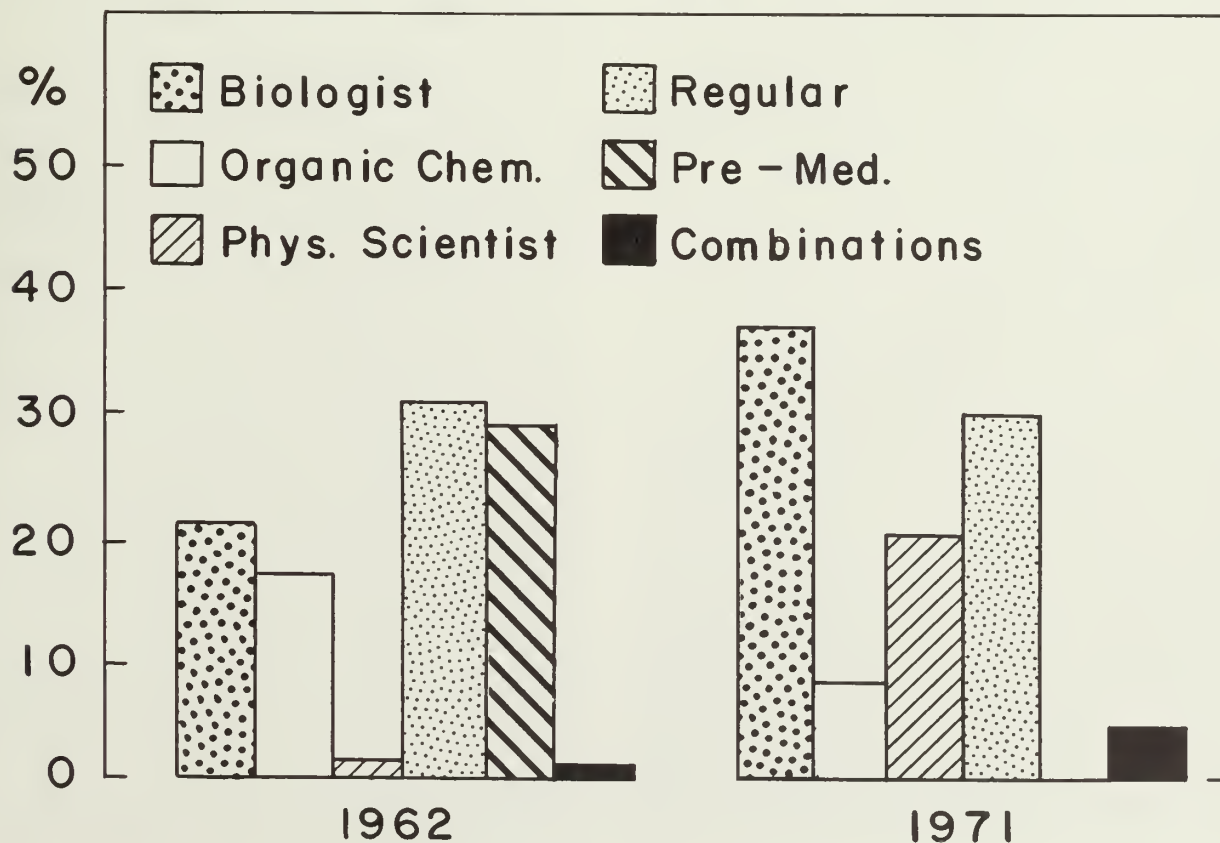
The marked increase in physical scientists entering the medical school next year presents another major problem. Twenty-five per cent of the class will fall into this category

as compared with 3% in the Class of '62. At present, there is no specific program to enable these students to build upon their unusually fine preparation. It is imperative that they be given such an opportunity because many scientists predict that the next great advance in medicine will come from the infusion of the concepts of mathematics and physics into biology. Future projections of pre-medical students indicate that the number of physical scientists will grow in the years to come.

Additional evidence of the strong scientific orientation of the students now entering the Harvard Medical School is the large number caught in the dilemma of whether they wish an M.D. or a Ph.D. As college seniors, 24% of the Class of '62 were in such a dilemma, 45% of the Class of '71. It is essential that a mechanism be built into the curriculum by which these students can easily change from an M.D. to a Ph.D. program, and vice-versa, without loss of time. If students could work with patients earlier in medical school, it might enable them to reach an earlier decision.

During recent years, most Harvard Medical School classes have followed the pattern of the Class of '62 in specialty choice: Approximately 30% become internists, 20% surgeons, 20% psychiatrists, and 8% pediatricians with the remaining 22% of the class represented by a few in each of the many subspecialties. Approximately half of the students in the three major specialties had made their choice by the end of their second year; 90% by the end of the senior year. Approximately one half of those in subspecialties made their choice after leaving medical school. These figures are important when designing a new multi-tracked curriculum, because it must take into account the time when most students choose a specialty and can pursue a narrower spectrum of studies.

CLASSIFICATION OF HARVARD MEDICAL STUDENTS



Types of Students

Another important area of concern is what kind of physicians these students will become, and how they will fashion their careers regardless of their specialties. Many of our studies are devoted to this area and, using a variety of techniques, including interest, personality and aptitude tests, academic records and questionnaires, we have delineated three major types of students at HMS. They are designated the student-scientist, the student-clinician, and the student-psychiatrist. In the Class of '62, 23% showed none of these patterns; 17% of the students had two patterns; no student had all three.

A brief description of the characteristics of each type follows:

THE STUDENT-SCIENTIST

These students' primary value is to be a scientist, and secondarily to be of service through research. The treatment of patients is in a tertiary position and is viewed as a science. This is well illustrated by their response when asked to check a number of activities which they consider important in their careers as physicians. Almost none of the students checked "working with people"; almost all checked "to be creative and original in science." Introspection was a very minor value.

These students are similar in many of their characteristics to graduate students in the basic sciences. They have high quantitative aptitudes and have carried the study of science far forward in college. At the time of admission to medical school, they are still debating whether they should work toward a Ph.D. or an M.D. degree.

THE STUDENT-CLINICIAN

These students are primarily interested in working with people, in service to people by directly helping them, and in applying pragmatically the basic sciences which are applicable to the diagnosis and treatment of patients. Introspection occupies a low place in their value hierarchy. In college they majored in extracurricular activities, usually occupying leadership positions on campus. Their aptitude scores are not as high as those of the other two groups of students. An increasing number of these future physicians are interested in dealing directly with social problems, and exercising leadership in delivering medical care.

THE STUDENT-PSYCHIATRIST

These students are primarily interested in introspection as a means for understanding human behavior. They are interested in working with people, but this is secondary to understanding the psychological nature of patients' problems, and it is in this way that they wish to be of service to people. Far down in the hierarchy of their value system is science. They are usually non-science majors with high verbal aptitudes who have studied the minimal pre-medical science requirements.

The distribution of the characteristics of these student-types at matriculation and graduation in the Class of '62 are shown in Figure II. Students with characteristics of scientists comprised 26% of the class at matriculation, 39% at graduation; student-clinicians, 49% at matriculation, 30% at graduation; student-psychiatrists, 21% at matriculation, 39% at graduation. Thus, the effect of the Harvard Medical School on its students was to increase the characteristics associated with scientists and with psychiatrists, and to decrease those characteristics primarily related to clinicians.

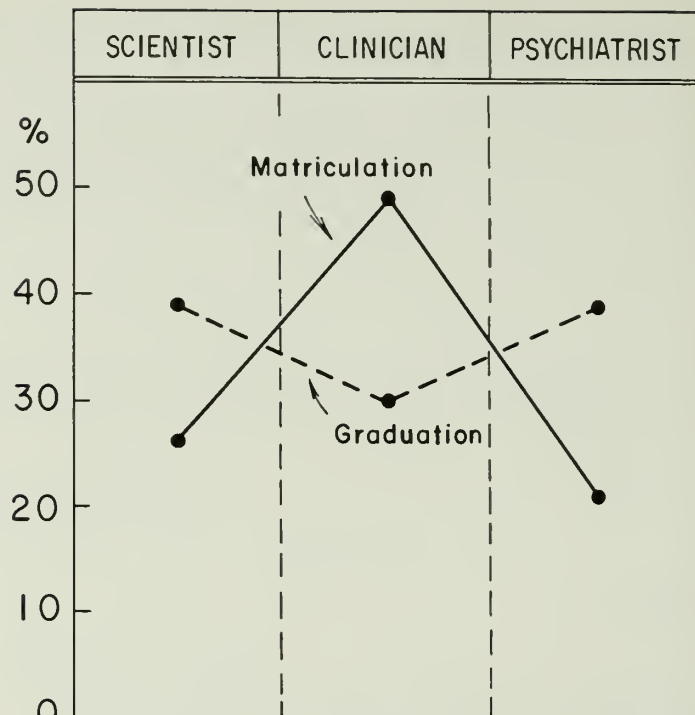


Fig. II

HARVARD MEDICAL STUDENTS '62

MATRICULATION and GRADUATION

The Class of '70 at matriculation last fall already showed characteristics similar to those of the Class of '62 at graduation. (Figure III) A comparison of the Class of '62 with that of '70 at matriculation shows a marked increase in the latter class in the number of students having the characteristics of scientists, 26% to 41%, and of psychiatrists, 21% to 36%, with a decrease in those with the characteristics of clinicians, 49% to 36%.

The increase in student-scientists with a decrease in student-clinicians is due to a number of factors. The opportunities to study exciting modern science courses in secondary schools and colleges, the research projects on which students can work during summers and the school year on NSF and NIH stipends, the great prestige of research scientists in our society, and the discoveries in science in recent years mold students into scientists. Another major consideration is that faculty promotions frequently depend more on research production than on clinical or teaching ability which results in a lack of clinical professors, in the tradition of Osler and Peabody, to serve as models for students. Full-time faculty members see themselves as scientists and attempt to produce replicas of themselves by influencing students toward research, and away from primary concern with patient care. The changes in the attitudes of practicing physicians is another factor. Interviews with practicing physicians not affiliated with medical schools, who have sons as medical students, show that they are discontented with practice despite high incomes. They derive minimal satisfaction from their work, feel that they have little prestige, fear regimentation by the government, and worry about the future of medicine, as they have known it. They unanimously wish their sons to enter academic medicine.

A rapidly increasing number of student-clinicians who

enter medical school planning to practice medicine by using science pragmatically, decide to go into psychiatry. As a result of their medical school experience, they see no other way to carry out their plans. They see medicine in teaching hospitals as overweighted with science and devoid of the human element. They do not see how group practice, or the sheer volume of work which physicians must take on because of the shortage of doctors in relation to the increasing population, will allow much time for considering patients' personal problems. Their view of the practice of medicine outside of teaching hospitals is such that they feel they would be unable to practice "good medicine." At the rate at which knowledge is increasing, they do not consider it possible to have a life-long continuing education in medicine unless they are affiliated with a medical school. These students see the psychiatrist as the one specialist who still works directly with patients and is concerned with the patient as a person. Some of these students may choose careers in public health or preventive medicine. They believe that in this specialty they can devote themselves to working directly with patients, which was their primary goal in becoming a physician.

The other group of students choosing psychiatry is the same group that has always chosen it—future physicians primarily oriented toward psychological material as an intellectual discipline who majored in a behavioral science in college. There is no significant difference in the percentage of these students in the classes of '62 and '71.

One of the major problems of the class of '62 at graduation was choosing whether to practice in the community, or to be in academic medicine. Twenty-one more students expected to be in private practice than preferred it. Nineteen more preferred careers in academic medicine than expected to pursue this career. Our data show that, for many students, the preference for academic medicine was related to their feeling that

HARVARD MEDICAL STUDENTS
'62 and '70 MATRICULATION

Fig. III

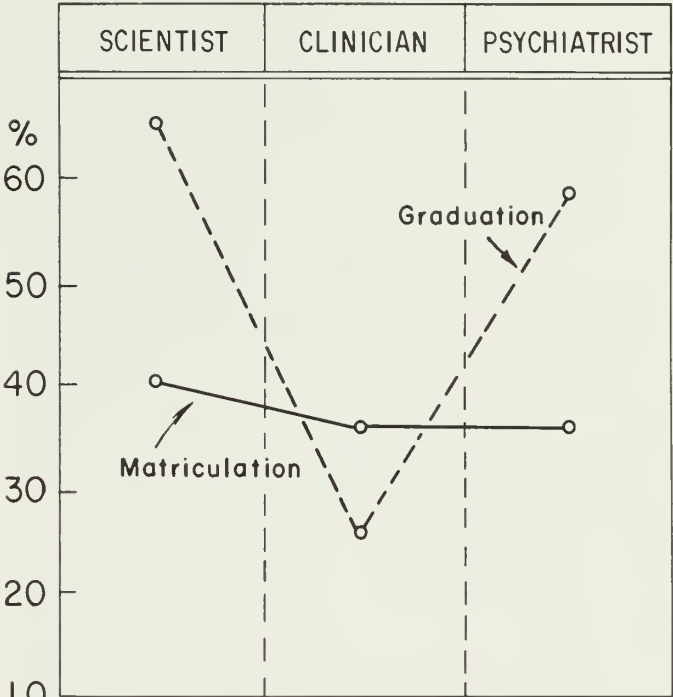
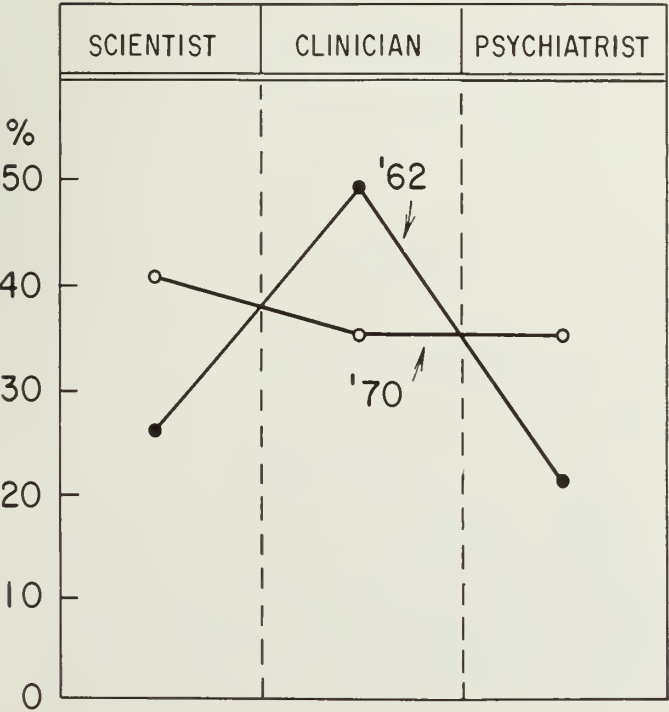


Fig. IV

HARVARD MEDICAL STUDENTS '70
MATRICULATION and PROJECTED GRADUATION

they could not practice "good medicine" away from a teaching hospital. This dilemma seems solved for the Class of '71 since the overwhelming majority reported in interviews or essays that they plan careers "doing research, teaching and seeing some patients." They do not plan careers away from academic institutions. This is not something they express in order to get into HMS, but is confirmed by our objective data.

The decreasing number of graduating physicians interested in the practice of medicine and desiring a career in academic medicine is not a phenomenon unique to Harvard.¹ It is of interest that the changes in the distribution of areas of concentration in college, of both the applicants and the admitted students to the Harvard Medical School, parallel changes nationally in the distribution of science majors receiving baccalaureate degrees.² Nationally, as at the Harvard Medical School, there is a marked increase in biologists and mathematic majors, with a decrease in general science concentrators.

If conditions remain the same, we can project a bimodal distribution of graduates at HMS: There will be a majority of scientists in academic medicine doing research, teaching, and treating some patients; and there will be an increasing number of psychiatrists. Figure IV projects the characteristics of the Class of '70 at graduation, based on the premise that the changes will parallel those that occurred in the Class of '62.

To many medical school faculty members, the marked increase in scientists represents an improvement. They feel that the advances in science have made it necessary that the majority of graduating physicians be primarily scientists who would take care of patients "scientifically." The doctor who is primarily a clinician—concerned first with people and service, and wishing to apply science only to patient problems—would be obsolete. This is not to imply that scientists

do not take care of patients. But, if they are committed to research in basic science and to patients, they will not be able to devote as much time to patients, and will not be as concerned with new patterns of patient care as full-time clinicians.

Price, in his book *The Scientific Estate*,³ sees the role of the physician in our society as quite different from that of physicians who are primarily scientists.

Engineering, medicine, and law in different ways have the function of taking the abstractions of science or other systematic knowledge and applying them to the concrete and practical affairs of men. That is not only their function; it is their purpose. Science can insist on ignoring questions of purpose in order to be objective and precise; the professions cannot.

The professions also have a "role between abstract knowledge and political action."

It would be difficult to argue that we do not need to increase the number of physicians who will fulfill the roles described by Price when we consider the present crisis in medicine. The increasing population with its resulting shortage of physicians, together with the rising expectations of society about medical care, the viewing of medical care as a right rather than a privilege, and the increasing role of government in medical affairs, are well known to all. It is imperative, if medical schools are to retain control of their own destiny, that they produce physicians who will be primarily concerned with the care of the sick, with improving the delivery of medical care, and with the complicated political problems involved. This does not mean that the number of scientific academicians should be lessened, or that medicine should become less scientific, but that a new type of physician be developed—equipped with new methods for taking care of patients, and capable of understanding the social forces in the community. These physicians will be grounded not only in science, but in the behavioral and social sciences as well. Some will enter academic medicine.

These new physicians will come from three sources: 1. The groups already referred to, who are primarily interested in

working directly with people but who see no opportunity to do so at present. 2. By awakening student-scientists to a new interest in the problems of practice; this can hopefully be carried out by the "new practitioner" type of professor beginning to appear in medical schools. 3. College students now in the social sciences who do not at the present time see medicine as a possible career.

The projection forward for the Class of '70—graduating mostly physicians who would be scientists in academic medicine or psychiatrists—assumes that conditions within the Harvard Medical School will remain static. However, the seeds of change are being sown from three sources: 1. The interest and awareness by many of our students in social problems and their desire to do something about them. 2. The increasing demands from society for excellent medical care, and the involvement of the government in this area. 3. Changes within HMS, under the leadership of Dean Ebert.

The most important finding in our studies of the past ten years has been that students do change markedly during their four years at HMS. This can only mean that as new methods for the practice of medicine and the delivery of medical care are developed within the medical school, a new type of physician will emerge who can serve as a model for students to emulate. On the basis of past experience, the impact of such physicians on our students will be compelling, and many of them will come to find rewarding careers by helping develop new ways to function as physicians.

At the same time, we must increase the opportunities for students who desire careers as scientists or psychiatrists. It is particularly important that provisions be made for the education of the physical scientists who will be entering in increasing numbers. It is difficult to see how a substantial number of the "new physicians" can be developed without decreasing the number of graduating scientists and psychiatrists, unless there is a marked increase in the student body.

In developing a new role for physicians, it should be remembered that the role of the physician has changed throughout history. To quote Sigerist⁴:

... The position of the physician in society, the tasks assigned to him and the rules of conduct imposed upon him by society changed in every period. The physician was a priest in Babylonia, a craftsman in ancient Greece, a cleric in the early and a scholar in the later Middle Ages. He became a scientist with the rise of the natural sciences, and it is perfectly obvious that the requirements put upon the physician and the tasks of medical education were different in all these periods.

In this century, the role of the general practitioner has declined as specialty practice developed, and today scientists and psychiatrists are in the forefront. Future physicians will fulfill more diverse roles than ever before. The immediate development of physicians grounded in both the natural and social sciences, who will concern themselves with developing new methods for the practice of medicine, must be given the highest priority.

BIBLIOGRAPHY

1. Sanazaro, P. J., *Educational Self-Study by Schools of Medicine*. Association of American Medical Colleges, Evanston, Ill., 1967.
2. National Science Foundation, Personal Communication.
3. Price, D. K., *The Scientific Estate*. The Belknap Press of Harvard University Press, Cambridge, Mass., 1965.
4. Sigerist, H. E., *The University at the Crossroads*, Henry Schuman, New York, 1946.



SCIENCE INNOVATION and MEDICINE



by Bernard D. Davis '40

DURING most of the history of science, the predominantly descriptive field of biology has been a Cinderella to its sisters in physics and chemistry. The past 15 or 20 years, however, have witnessed a dramatic projection of biology into the forefront of science. I would like to discuss some possible implications of this development for medicine as a whole, and for future directions at Harvard Medical School in particular.

To provide a concrete illustration, let me list briefly some of the major advances in the field of molecular genetics. Only 14 years ago Watson and Crick discovered that DNA, the material basis of heredity, has a double helical structure, in which the complementarity of the nucleotide bases in the two strands immediately explained the mystery of gene replication. Since then, a brilliant series of consequent discoveries have emerged:

Each gene is expressed through the synthesis of a complementary chain of messenger RNA, whose information is in turn translated into a specific polypeptide chain.

The genetic code employed in this translation has been completely defined, each triplet of nucleotides specifying a particular amino acid.

The activity of each gene is regulated by the level and the configurational state of a specific protein repressor.

The key to this regulatory activity, and to other major types of biological regulation, is the *allosteric* property of certain proteins—the ability to shift from an active to an inactive configuration, and vice versa, in response to variations in the concentration of specific small molecules in the environment.

The amino acid sequence in a polypeptide chain dictates just how the chain folds into a globular protein with a specific surface, thus permitting one-dimensional information to be translated into three-dimensional structures; and the same weak forces that thus cause portions of a polypeptide to align spontaneously also cause the aggregation of macromolecules into cells, and cells into organs.

This remarkable set of discoveries has only begun to have an impact on medicine, especially in relation to hereditary diseases, drug action, and viral structure and multiplication. Enormous further applications to medicine are bound to appear as the powerful tools of genetics, added to those of radioactive tracers, chromatographic analysis, and electron microscopy, are focused increasingly on cultivated animal cells.

As profound as these discoveries are, I believe that even greater future consequences derive from a social discovery: that the rate of scientific advance has not been limited by the number of geniuses born, but could be strikingly accelerated by providing the resources to support more investigators and better facilities. This development has several consequences for medical education.

1. While expansion of the support of scientific research obviously cannot long remain exponential, a high level of support will surely continue. We shall therefore have to continue to adjust to a high rate of discovery and change.

2. The intellectual attitudes and the talents required for the most effective work in the biomedical sciences are changing, as the approach is becoming more analytical. These sciences are now attracting many brilliant, theoretically oriented people who had started in physics, or who might formerly have gone into that field; it is of interest for medicine that some of these investigators are shifting from the study of molecular genetics in bacteria to such subjects as differentiation and neurophysiology.

3. The Federal grant system initially gave a great advantage to medical schools (compared with biology departments), and to already established centers of excellence. Various pressures, however, are rapidly eliminating this advantage, and we are facing stiffer and stiffer competition.

This changing pattern seems to me to have several implications for Harvard Medical School.

In **recruitment**, we cannot assume that our reputation and location will continue automatically to attract top faculty and students. Indeed, in adjusting to rapid change, those institutions with a long tradition have a special problem.

In the **selection of students**, the increasing impact of scientific discovery on medical practice surely forces us to place more emphasis on scientific aptitude. But, since a sympathetic, understanding personality is of vital importance in many aspects of medicine, and especially in psychiatry, the Committee on Admission is bound to face an increasing problem in judging the applicant who rates high on this score but poorly in tests for quantitative aptitude.

Our **educational aims** can no longer be to give a future physician a block of information that will serve him adequately all his life, but must try to develop attitudes that will encourage continuing self-education. As you know, this consideration, among others, recently started the current exhausting reappraisal of the curriculum.

Finally, I would like to discuss a more specific adaptation of the School to changing times: the possibility of an M.D.—Ph.D. program, or its equivalent.

Formerly, the student could acquire in medical school most of the tools required for the kind of research his professors did. But as medical research becomes increasingly professionalized, and increasingly dependent on more sophisticated techniques, the education leading to the M.D. degree becomes less adequate as a basis for a career involving a substantial amount of research. The students recognize this problem: studies by Dr. Funkenstein have shown that among students entering college, an increasing number of the best would-be M.D.'s end up as Ph.D.'s instead.

For those of us in medical education it is natural to deplore this trend. But I am not sure such a trend is undesirable for medicine, provided enough of the converts retain an interest in its problems. I am afraid that if we try to solve the problem by increasing enormously the amount of elective time in the curriculum, in the hope of increasing our resemblance to a graduate school, the compromise may fail in two ways: we may short-change the future physician of the broad coverage of topics that still seems essential in his education; and, at the same time, we will not be creating a real graduate program. For it is an illusion to believe that the essential differ-

ence between graduate and medical education is the wide choice of electives in one area and the fixed curriculum in the other. Theoretically, Ph.D. students can take any of the hundreds of courses listed in the Arts and Sciences catalogue; but in practice, all students in a given field follow a largely prescribed set of courses. The essential feature of graduate study is, rather, the prolonged period of research under a preceptor, terminating in the production of a substantial thesis that makes a professional contribution to scientific knowledge.

The Ph.D. program in the preclinical departments at HMS, administered as the Division of Medical Sciences of the Faculty of Arts and Sciences, presents other problems that tie in with those just described. This program now graduates about 20 students a year, and, to their teachers, the prolonged intimate contact with these students is especially rewarding. Though this program has been improving in recent years it is still not as successful as the Medical School in attracting an outstanding group of applicants. Moreover, our Ph.D. students, as a minority group in the School, tend to feel like second-rate citizens. Finally, the occasional medical student who shifts to a Ph.D. program often feels like a drop-out, and usually goes to another institution.

In recent years, in response to the problems of both M.D. and Ph.D. education, a number of schools have set up a combined program, leading to both degrees, but here at Harvard we have tended to feel that one doctor's degree is enough. Many faculty members, however, now believe that we should reconsider this view, and the Dean has set up a committee to explore the problem. In general, the aim would be to set up a flexible program with three possibilities: the student would start on a pathway that would lead to the double degree after six years or so; but he would also be free to shift, after one year or after two, to either of the two shorter pathways that lead to the single degrees.

It should be emphasized that this proposal is aimed not at diverting education at HMS from medicine to biology, but rather at providing a more sophisticated education in areas that will become increasingly important if we are to maintain our tradition of producing leaders in academic medicine. Additional benefits can also be envisaged. A recognition of the special needs of the research-oriented students, and the provision of extra time for their education, should make it easier to meet realistically the needs of the rest of the medical class by a program with a modest elective component. Moreover, there is evidence that some of our best potential applicants to medical school are already being lost to schools that offer an M.D.—Ph.D. program. Finally, the option of taking a fork in the road after one or two years will surely not serve as a oneway street to divert students from the M.D. to the Ph.D., but will also attract into medicine a number of exceptional students who would otherwise have gone into a less applied field.

I have focused largely on a rather narrow aspect of medical education, involving only a small fraction of our students. But regardless of how this specific problem is resolved, its recognition illustrates a fact that we shall have to live with: in the past the medical profession, for good and sufficient reasons, generated public confidence by conservatively holding to the time-honored ways of doing things; but since a high rate of scientific discovery now generates rapid technological advances and changing social patterns, we must learn to adapt rapidly to these changes.

The DOCTOR in a CHANGING WORLD

THERE are two assumptions upon which I shall base this discussion. First, medical schools, sooner or later, always get involved in the changes that occur in society, and secondly, the public today views medical care as a human right. I would also venture to say that the public only wants one kind of medical care, and that the charity patient will be extinct in 10 years.

If one is going to look at the doctor in this changing world that has a bias about what it wants, it is necessary to look at the whole system. Here I must bow to Professor Dunlop, an economist at Harvard University, who has done something that I have found very helpful. He has made doctors look at the economic system, and at their own health care system as the economist views it.

He points out that in the economic free enterprise system we have, there are customers or householders; there are entrepreneurs—the manufacturers, wholesalers, retailers; and there are institutions—banks and taxes. The economists are always looking at the relationship of each group to the other, to the variables, and to what is happening in society, to see how all of these influence the economic system. If there is a great scientific breakthrough, as when the long-chain molecule that led to the development of dacron and nylon was discovered, the textile people immediately wondered what they had to do to change their products. They studied the effect a technological development would have on their industry.

The health care system in this country is also, essentially, a private enterprise system. Doctors talk a great deal about government “moving in,” but 75 per cent of the funds spent in the health business come from private sources. And most of the government’s 25 percent is spent to purchase care from private entrepreneurs.

Let us look at our health system; we have patients; we have entrepreneurs—doctors, nurses, social workers, pharmacists, dentists and paramedical personnel; and we have institutions—hospitals, nursing homes, extended care facilities and pharmaceutical manufacturers. We also have professional schools in our system.

But, we do not study our system. We pay very little attention to each other, or to the way we interact. We change the medical school curriculum, and pay no attention as to whether the nurses are changing theirs. We have planned our



by Leona Baumgartner, M.D.

hospitals in a hit or miss, topsy-turvy way. We have grown up as private entrepreneurs, each of us isolated professionals or institutions with little concern about what is happening in the rest of the system. We have gone about our business with a laissez-faire kind of attitude, and we have ended up with a very inefficient, many-splintered operation. This leads to the fragmentation of care so widely discussed.

For example, we knew perfectly well that we had a larger and larger population of older people. Did we plan for increasing numbers? were we ready for them? did we have the nursing homes we needed? And even more importantly, did we plan for the changing pattern of illness? Most of our institutions were built for short-term episodes of acute illness. Of course, people are still acutely ill, but the pattern of illness today is more and more one of chronic disease, and our institutional set-up has not changed to provide the continuing care the chronically ill patient needs.

Consider the new ways of delivering medical care; group practice, regionalization, and third party payments. Look at the rising expectation of the public about what modern medicine has to offer. And look at the way Congress has responded to the public’s demands. In addition to all of these facts, there is more money available in the private and public purse. The health business is the third largest in the country, and is rapidly moving into second place. Only agriculture and construction employ more people or consume more money, currently, some 43 billions of dollars per year. This is about 6

per cent of the Gross National Product, and 6 per cent of personal expenditures.

At the same time, costs are going up tremendously. Last year, hospital expenditures were up 16½ per cent. Society has absorbed these costs, but there is a growing belief that our system is not too efficient. Hospital administrators tell us that there is not much fat to cut from the present system. But, the real question remains: Is there any limit to the costs and the hunger for manpower, if the system remains as it is today?

What is the Harvard Medical School going to do about all of this? We are going to work on these problems with the same vigor and spirit with which we approached the biomedical problems. Why? Because, it would seem that the University is the only force that can successfully bring to bear the intellectual resources necessary to study the system as it exists, and to modify it so that it can perform more efficiently. In a sense, the Medical School has a responsibility to do this. It has influenced this system enormously by developing sophisticated methods of diagnosis and treatment that today are being imposed upon a system which cannot absorb them, and which is ill-adapted to change. Medical schools have made little effort to evaluate or reconstruct this health care system so that it may function efficiently. The time has come for them to be concerned.

How can HMS go about this? There is very little theory, and very few, if any models to copy. We will find out how the system works, modify it, and then determine how well the modification works. We are proposing a series of what we hope are viable alternatives, because we do not think there is any one way to reform the system. We are setting up different kinds of "patient care laboratories." Some will be in poverty areas. To date, one is funded, and six more are on the drawing board.

A second laboratory is the total community approach in the city of Cambridge, with its 100,000 people. It is a community which uses the great medical centers on this side of the river, as well as several hospitals, institutions and services within its own borders. One of the last things George Packer Berry did was add the Cambridge City Hospital to the teaching hospitals of HMS. But, what kind of a hospital should it be? It has been decided that it should be a new type of teaching hospital—one that will concentrate on the needs of the Cambridge community, and will use the large hospitals in Boston. Perhaps it will become a model of a teaching-community hospital that would use a regional setup for its very specialized kind of care.

The first step has been taken in Cambridge. The city government has changed its laws, and established a post for the first combined Commissioner of Health, Hospitals and Welfare in the U.S. The second step will be to relate the city hospital to other hospitals and health services in the area. A third step will be to see if we can study and evaluate the total health resources in the city. We want to know how the providers of service relate to one another; how they relate to patients; how patients get into the system; where they enter and where and how they flow through it, to use the jargon of the systems analysts.

In addition to these patient laboratories, we hope to establish a voluntary prepaid insurance scheme, which will operate from the teaching hospitals of HMS. These group practices will offer comprehensive care of all kinds. A corporation is being set up, and will work through existing insurance companies. This is a new kind of venture that will give students an opportunity to work in a different way with patients, and will offer the Medical School and scientists a different kind of laboratory.

A third plan is to create an all-University center in which economists, public administrators, social scientists, systems analysts, operation research experts, educators, engineers, and management people would come together to study the problems of the health care system. Our goal is to integrate the intellectual and the practical—to move from theory to practice. This is not going to be only a "think-tank." It is going to be action-oriented, and will tackle the real problems facing medicine today.

In summary, we are going to try new approaches, and we are going to measure them. We hope to develop a medical school where doctors are aware of, and interested in, the problems of medical care in an inevitably changing world.

No one knows whether or not these ideas will work. The time is right, and the social pressures are such that something has to happen. But, before these plans can work, three conditions must be met: it must become as respectable to seek solutions to these problems of medical care as it is to pursue biological or physical research; we must attract a great deal of money, because this kind of social research is very expensive; and most importantly, if we are to succeed, we must create that very rare thing Alan Gregg called the "air of excitement."

If the experiment succeeds, the Harvard Medical School will have made a significant contribution to mankind, and to the doctors who will work in this ever-changing world.

The afternoon speakers from l. to r.: Drs. Davis, Funkenstein, Baumgartner, and Rutstein.

David D. Rutstein's '34 address, "Curriculum Changes to Meet the Challenge" will appear in a future issue of the HMAB.





Everyone who attended Class Day this year will remember, not the grey sky and chilly temperature, but an emotionally stimulating morning.

Once again, for the third year running, Class Day exercises were held in the Boston Latin School's auditorium, a large and tradition-steeped hall, which, for this occasion, was filled with a festive looking crowd and the oompah-pahs of the Harvard University Band. Wives, families and friends had all come to witness a happy ceremony. What they witnessed was as good as any good show, and it was, furthermore, an example of the illustrious and ebullient character that belongs forevermore to the Class of '67.

Apart from the excellent addresses (outlines of which appear in this issue), the welcoming remarks made by Dr. Roy O. Greep, Dean of the School of Dental Medicine and the presentation of the honor awards made by Dr. Joseph W. Gardella, associate dean for HMS student affairs, there were several innovative, special commemorations made by Richard S. Shulman '67, the permanent Class president.

First came an amusing presentation to Dr. Gardella of a hugely wrapped plant; in due course the plant turned out to be a young catcus. It seems the Class made this presentation to him in lieu of the orange tree which they had previously and privately given to the Student Affairs Office staff—a presentation at which Dr. Gardella unexpectedly appeared and intimated that he too liked plants in his office.

A special expression of the Class's gratitude was made to Dr. Eugene M. Landis and Dr. Otto Krayner, both are now emeritus professors, for "all their

help and kindness to members of the Class."

A standing ovation greeted Miss Noreen A. Koller, registrar, as she made her way to the stage to receive from Dick Shulman a special token "of the Class's appreciation and affection."

James B. Kahn '67, editor to the Aesculapiad Year Book announced that it was the Class's unanimous decision to dedicate its year book to Paul R. Draskoczy, assistant professor of pharmacology. They further decided to institute, in the words of Thomas G. Gutheil '67, "a tradition of praise." For this purpose a large plaque was made and will hang, from now on, in Vanderbilt Hall. It is hoped that future graduating classes will perpetuate the "tradition" by adding one outstanding faculty teacher's name every year. Dr. Draskoczy was given a small replica of the plaque inscribed for his, "peerless mastery of the art of teaching."

There were fifteen members of this 178th class who received honor awards for their work in the last four years. **Richard S. Shulman** was given the Harvard Medical Alumni Association Award "in recognition of his all-round ability and well-balanced personality." Dr. Shulman was president of the fourth year class, and will be its permanent president. **Thomas P. Stossel** was awarded the Leon Reznick Prize for "showing the most promise in research." The Henry Asbury Christian Prize "for diligence and notable scholarship" went to **Laurence B. Gardner** and **Jon Eliot Rohde**. **Zalman Myron Falchuk** received the Massachusetts Medical Society Prize for "the medical student who seemed most notably to have developed the intangible qualities

of The Good Physician." The James Tolbert Shipley Prize for "research, the results of which have been published or accepted for publication" went to **David G. Johnson** and **James E. McLennan**. **Michael R. Sherwood** received the Borden Undergraduate Research Award in Medicine "for original research." The Moses Maimonides Prize of the Greater Boston Medical Society "for integrity, perseverance, courage and force of example" went to **Lawrence D. Gelb**. The Boylston Medical Society Prizes "for excellence in medical dissertations" were awarded to **James B. Kahn**, **Thomas G. Gutheil**, and **H. Harris Funkenstein**.

The Harvard School of Dental Medicine presented the following awards to its 98th graduating class. The Harvard Dental Alumni Gold Medal "for all-round scholastic excellence" went to **Philip Van Knoettner**; the Harvard Dental Alumni Silver Medal to **Douglas S. Dick**, who also received the Harvard Odontological Society Award "for the best senior student seminar." The Grace Milliken Award "for the outstanding paper in the field of dentistry" went to **Joseph S. Perkell**; and the Dr. Norman B. Nesbitt Medal "for excellence in the field of dentistry" was awarded to **Michael E. Rowan**. **Douglas S. Dick**, **Robert B. Donoff**, and **Philip Van Knoettner** received the Omicron Kappa Upsilon Certificate, awarded by the Harvard School of Dental Medicine's Gamma Gamma Chapter of the national honorary dental society.





Star Gazing

by Thomas G. Gutheil '67

TO SAY, in the language of the laboratory, that today our four-year-long reaction has reached its endpoint would be most misleading; because that particular turn of phrase suggests that by this time some desired result has been attained. On the contrary, our assembly here more closely resembles a snapshot taken of a scene of exuberant and evolving chaos—a moment artificially frozen in the flow of time to allow close examination of what it contains.

Traditionally, such an occasion as this is spent in an historical inventory, a reflective summing up, in which we ritually review the data from our own clinical trial; and such an inventory traditionally takes the form of an attempt to depict the collective identity of the class. To those who know us as a class, one thing should be clear: although, with some grumbling, we might rationalize our way to comfort with the idea that we are no better than any other class at Harvard, loud would sound the clangor of outrage were we to be told we were no *different*. Then how shall we understand our identity—the better to celebrate our difference—now, at the time of our passing on?

When a patient passes on in clinical medicine, that which he has to teach us can be preserved and promulgated by means of an arcane medical ritual known as the clinical-pathological conference, or CPC. Let us see what can be learned from a CPC on the Class of 1967.

The class was quite well indeed until four years ago when it presented itself to Building A of Harvard Medical School with a chief complaint of "burning desire to learn medicine," and was admitted for cure. The present illness was of variable onset; past history was collegiate; family history was richly contributory; social history was normal, before admission; and the review of systems was as varied and idiosyncratic as a highly skilled admissions committee could devise. Physical examination was diverse, but within normal limits.

The clinical course of our subject was most interesting in the light of our gathering here, for, among other occasions, today represents one of the rare gatherings of our entire class together—a brief clumping before the individual component cells disperse down branching futures. Gatherings of our class are rare only since the preclinical years. In those times of fond recollection, each of us felt that the class was too much with us, as we enjoyed lecture times, meal times, lab times and conference times in total togetherness. It was the scheduling of summer camp with the atmosphere of the army—a hundred and thirty-man lock-step.

In the beginning, of course, it was less gathering than cowering together, but it soon appeared that we need not have worried, for the first year was one of utopian homeostasis; the prevailing mechanistic modalities were balance, rhythm, harmony—and negative feedback.

In the second year, union was still the source of needed strength as the class collectively braced itself to meet the challenging onslaught of pathogens. Acute and insidious ills, benign and fulminant processes, invasive agent and shattered physiologic functioning racked our corporate health.

The afflictions were resolved by examinational crisis at second year's end; at that time we might appropriately have quoted Oscar Wilde to describe ourselves: "We are all in the gutter—but some of us are looking at the stars." The stars, however, were not very informative, and yielded no predictive or oracular insights into what was to come. Then came the clinical diaspora, as the parent entity, but recently increased in size, shivered into fragments that scattered to the four corners of the known medical world—Boston.

As we insinuated ourselves into the clinical pool, our entry was marked by mere ripples in some cases; tidal waves of shock in others. But in any case, we were in direct relation to sick human beings, and—despite what many had tried to prove to us—that was what we were here for.

It was the change of viewpoint that lent perspective—or rather retrospective—on what had gone before. We were enabled, by reflection, to see its deficiencies and failings and, far more importantly, we could articulate them to the faculty with analytic detachment and constructive force. The value and meaning of our efforts depended on the historical truth that the times make the occasions; and the times in medicine are redolent with the spirit of reform. So at the same time that the academic monoliths were contemplating their navels with an eye toward improvement, our voices were added to general cry for introspection and change.

Ah! but what a subtle word is "change." It floats free of the coordinates of time, unattached to present or future, but merely celebrating their succession without praise or condemnation. What significance does change have for us? Let us probe its meaning by considering what it was not.

Two rivers flowing side by side have only the fact of constant motion in common; neither related to the other. Such independent simultaneity was *not* the relation between students and school. It does not suffice to say, furthermore, that we were changed by our surroundings, though that has

and Diagnostics

unquestionably occurred; nor does it suffice to say that we have wrought change on our environment, though that, too, has happened. The solution to this question—as well as diagnostic insight into our case—may derive from the realization that our change was not merely simultaneous but mutual; that our identity is defined as those who have *shared change* with our school in a manner and to a degree that was not seen before.

Our four year course during this therapeutic interaction was somewhat happier than we would have predicted, though less enjoyable than we would have hoped. But we are partially consoled for our past frustrations by reflecting that the position of our class is rather like that of those French peasants who died on the barricades of Paris during the Revolution. We, like they, were initiators of reform without being able to enjoy the fruits thereof; since, we, like they, pass on before reform is realized. This, then, is our class's clinical course.

A well-designed CPC does not leave all questions answered, and our own case raises three heuristic issues, best considered in terms of certain goals basic to medicine.

First: Our class, though made up of individuals widely differing in backgrounds and goals, received the same mass of material; can Harvard achieve for its students the basic medical goal of individualization of care and management?

Second: The small number of truly great teachers—Federman, Draskoczy, Pfefferkorn, Erikson, Roth, Nemiah, and a few others—struck us as being severely underutilized; can Harvard achieve for its students the basic medical goal of effective utilization of available resources?

Third: From the student's eye view, it seems as if the good teachers, despite their being good teachers, leave; some for no reason that a student could appreciate; some lured away by the siren call of advancement; some sent as sparks from the parent flame to illumine distant darknesses. Can Harvard achieve for its students the basic medical goal of metabolic equilibrium by ensuring that the influx of men who are primarily teachers will equal or exceed the drain on this pool of priceless individuals; and can it achieve the medical goal of preservation of useful function by honoring, advancing, and paying these men selected for their matchless gift?

These are therapeutic questions that this clinical pathological conference raises for us. They are not to be answered now, but in future clinical courses; yet they ask urgently for answers. The student has only a small voice in such matters. He cannot endow a professorship for a good teacher; he can only praise him. This year our year book is instituting a tradition of praise. A plaque is to hang in Vanderbilt Hall *in perpetuo*, on which will be entered yearly, the name of an outstanding teacher. This year, Paul Draskoczy of the pharmacology department receives the award. But if we as students can only honor teachers, we can hope we are not alone in this practice.

This particular CPC differs from most in that we, the

patients—rather than being the person observed and described—are ourselves observers capable of description. One observation comes to mind that may represent the true lesson of this CPC; it is a clinical observation of today's scientist that detects a bizarre ocular disorder—a simultaneous near-and-far-sightedness—that represents not so much a disorder of visual perception as a defect in the direction of gaze.

Today's scientist stares far-sightedly outward at the macrocosm, focusing on the infinite, the distances between planets and the stately march of the ordered heavens; and he sees an unknown region that cries out for exploration. But perhaps a more significant distance is that between the ordered and the disordered human mind; and no region cries out more urgently for exploration than the strangers in our skins.

Today's scientist stares near-sightedly inward at the microcosm, focusing down into the looking-glass land of the infinitesimal, until his vision embraces the diaphanous membranes that are the barriers between cells, and the blueprints of birth. But perhaps the barriers between people are more urgently in need of investigation; perhaps the membranes walling off the medical disciplines from each other are more urgently in need of permeation; and perhaps, given the problem of man's breeding himself off the face of the earth, improvement of diverse means of *death* control is less profitable than the opposite approach.

The true danger of this visual defect—this near-and-far-sightedness—is that the problems of man, and man himself, lie in the middle distance; if our gaze is not thoughtfully directed, we will see nothing of importance.

In the changes we have shared, one fact has remained constant: the subject is still people; for medicine it always has been. But one thing is different. While Horace Greeley a century ago could exhort the young to "Go West," where need and opportunity awaited them, today's doctors hear the exhortation to "Go World," where the need is desperate and the opportunities, as yet, embryonic. How shall we answer the world?

In our time here physicians and laboratory people alike have enjoined us to bend our future investigative efforts to solve problems in areas where knowledge—as in so much of medicine—is pitifully slight. Let me add an injunction to those from before: that we do not answer the world's cry by becoming *specialists*—who are classically described as knowing all there is to know about almost nothing, and almost nothing about all else. Let us become *unspecialists*, whose understanding transcends the barriers of category. Let us share our change again, this time with the world, by sounding the trumpet to level the artificial Jerichoan walls that separate and cramp our narrow fields of work and our narrow geographic regions and concerns. Let the subject still be people, for only in this way will medicine answer the world in a language it can understand.

It is a great honor and a real pleasure for me to address you briefly today on what is, I think, one of the nicest days of the medical school year. I am particularly pleased, because in giving me these twenty minutes you have nearly doubled the time allotted to the Department of Psychiatry in the medical school curriculum.

In thinking over, a few weeks ago, what I would talk about today, I decided, of course, to discuss medical education, since this is very much in the air these days. Sometimes there is quite a smog over Building A. I might even paraphrase George Bernard Shaw and say that "Those who can, teach; those who can't, discuss the curriculum." You all know, I hope, the derivation of the word "curriculum." It comes directly from the Latin *curriculum*, which means "course" or "race"—in other words, a sporting event in which everyone runs around in circles. I chose this topic because on reflecting on my own medical education, I realized that there was one important teaching device which is not mentioned in any of our discussions. I am referring to the many wise sayings and quotations that are inscribed on the walls of our various school buildings.

When I came to medical school, on the very first day I encountered that quotation from Claude Bernard painted around on the ceiling of the Vanderbilt Hall lobby: "*Dans les champs de l'observation, le hasard ne favorise que les esprits préparés.*" Roughly translated this means, "It is hazardous to be out in left field." Despite this admonition I lived for two and a half years in Vanderbilt Hall, until I had the chance to get married. Even that led to little change—I simply moved down to Queensberry Street. But the food was better, and my roommate was nicer, and, furthermore, she worked, which brought in a little income.

Another inscription early in my experience here was that Latinized version of Hippocrates, chiselled on the wall of one of our many massive buildings: "*Ars longa, vita brevis.*" My classical training, although not much help to me in biochemistry, immediately enabled me to translate this one as "Gluteal adiposity is incompatible with longevity." I attended no more lectures.

In my clinical years I began to hit the hospitals—or, perhaps more accurately, I should say they began to hit me. The Massachusetts General had a lovely inscription all done up in bronze in the Ether Dome. It was terribly long, and I never really had the time to read it in its entirety, but it said something to the effect that the humbug of the Ether Dome was well known all over the world. It was easily the longest inscription in town—I suppose that's how you get to be Number One.

Fourth Year Surgery at the Brigham was an interesting experience. On the first day of my rotation I noticed the following saying painted over the door leading into the operating rooms: "Surgery ends when the patient enters the operating room and begins again when he returns to the ward." A cynical classmate of mine said this was only a comment on the technique at the Brigham, but I interpreted it differently. In fact, I spent the whole of my

first week on the wards talking with patients. It was an embarrassing moment when the surgical resident finally caught up with me, but everything worked out in the end, and when I finished the course, they let me keep the retractor as a souvenir.

The Boston City Hospital was a little disappointing. There I found no inscriptions painted on the walls. In fact, there was no paint on the walls at all. However, scattered around the maze of subterranean tunnels, there were numerous graffiti, some of which were quite interesting. I still remember one, scribbled somewhere in the remoter regions toward the Mallory. It read simply: "April 17, 1942. Water gone. Hope of rescue fading." That was certainly instructive, though hardly reassuring.

Well, this was about as far as I had got in preparing my speech for today, and frankly I wasn't too happy about it. Somehow, it just didn't seem profound or penetrating enough for the occasion. As the days wore on and no further ideas came to me, I began to get a little desperate. And then one day a couple of weeks ago I made a fortunate discovery that solved all my problems. Let me tell you what happened.

I was in the Countway one night doing some research for a paper I was writing entitled "The Oedipal Implications of Oh, Dad, Poor Dad!, or Who's Afraid of Virginia Woolf?" (Anything, you know, to crank up that old bibliography another notch.) I happened to go down to the sub-basement on level 2 to consult some old journals, when I stumbled across a carton of those old manuscripts and palimpsests that Mr. Esterquest has been resurrecting from the Boston Medical Library collection. I lifted the lid, and the topmost manuscript caught my eye. It turned out to be the fragments of an unfinished play, unsigned, but in holograph. From the language and style it appeared to date from the Elizabethan period, and it dealt with a theme that has very great relevance for many of our concerns today. I decided, therefore, that rather than trying any longer to write my own speech for you, I would read these fragments to you instead. I am sorry that I can't show you the manuscript itself. The members of the English Department across the river in Cambridge are busy studying it. They've already had one C.P.C. on it (that's a "Criticism and Punctuation Conference") to settle its authorship. The final decision has not been made, but I can tell you that Francis Bacon has his devotees, some are supporting Marlowe, and a few have even hinted that Shakespeare himself had a hand in it. The majority, however, believe it to be the work of some poor hack trying, like the rest of us, to earn a living by grinding out pot-boilers.

The play is entitled *The Gentlemen of Bologna*, which as you know was a famous medieval Italian medical school, second only to the school of Salerno slightly to the east and south of it. The scene opens in the Faculty Room of the Palace of the Medical Faculty, where a faculty meeting is in session discussing the curriculum. A character called MAGISTER FACULTATIS is speaking:

The Gentlemen of Bologna

MAGISTER FACULTATIS:

Gentlemen of Bologna, the wounding winds
of change
Are howling through the Groves of Academe.
The quiet, sylvan land we've known and loved
Exists no more. Around us lie strewn our old
Familiar friends, victims of the wintry blast.
There stretched lifeless on the littered ground
The dear, dead trunk of aged Anatomy
Points his torn and useless roots to the skies.
See how stout Surgery waves wildly in the
gale,
His specialties blown to earth like autumn
leaves.
And Physick, once proud in lofty isolation,
Now bows its limbs to mingle in the crowd.
All is new and strange, and we have lost
Our bearings in a fractured world, o'erturned
By powers that we've not made, nor under-
stand,
But now 'tis ours the mighty task to build
A fresh abode where we may live and work,
Where once again sage owls may call wise
hoots
To student ears; where brisk, investigating
squirrels
May store up hoards of facts to feed computer
Minds, and treetop parliaments of chattering
birds
May sing their self-proclaiming songs in
endless
Repetition, the while the regal lion
That Dean of beasts, dispenses administra-
tion.
Come! Who will start us on the way
And lead us to a new curricular day?

At this point a faculty member named ANATOMICUS
rises and says:

Hours, hours, hours—will you give hours
To me or not to me, that is the question.
What is there nobler than to teach anatomy?

The MAGISTER FACULTATIS replies:

Out, damned sot! Your butcherous presence is
No longer needed on this faculty.
(Exit ANATOMICUS)

As the curtain rises on the next scene, we find ourselves on the steps before the
Palace of the Medical Faculty, where two medical students are seen, holding a
flask of urine up to the light of the setting sun.

FIRST STUDENT:

What mischief work the grayheads now
within the palace walls?

SECOND STUDENT:

In sooth, sir, I do believe they are changing the
curriculum.

FIRST STUDENT:

God be with thee, sir, I haven't finished this
one yet!

SECOND STUDENT:

Ay, friend, they be always tinkering,
tinkering, tinkering to find a stronger cure
for our humanity. They clyster us with facts
until our poor distended brains do long for
the easing purge of examinations. They
dose us with soporifics in their lecture halls.
They bleed us of our humor, and with
emetics they bring up our deep-most bile,
while with leeches and cuppings they do
extract from us that very imagination that
first gained us admission to their halls.
But lo! Who is that who approacheth with
mournful steps? Why, 'tis old Anatomicus.
See how his once tall frame is stooped and
bent with cruel grief. Hark! What is this
he is saying?

(Enter ANATOMICUS and soliloquizes as follows.)

ANATOMICUS:

Alas! Vesalius' heir is cast adrift
Up the creek of life without an oar.
No longer will my rudderless craft explore
And map that sinewy, cadaverous world of
yore.
No longer shall I skirt the Isles of Langerhans
And Reil, nor sail Aorta's pulsing stream,
Nor trace the curving Lingual's vulgar course
Around old Wharton's duct. No more will
Sylvian's
Fissure see my cautious sail, as slow
I thread the reefy perils of that tortuous fjord.
No more will sinuous Sigmoid's river feel
The searching knife edge of my probing keel.
I ne'er shall turn again my prow to breast
The broad, majestic reach of Iliac's crest,
Nor peaceful, cruise the calm Canal of Nuck,
The world is out of joint, and I of luck,
And dead men's undissected hulks are left
To rot upon the sands of yesteryear.

Here there is obviously a gap in the manuscript. Either it is lost, or the author was only writing in bits and snatches. We pick up the thread back at the faculty meeting, where a character named ALCHEMICUS is holding forth:

ALCHEMICUS:

And so, Gentlemen of Bologna, the answer lies
Within the alchemist's retort. The cause of
human
Ills doth dwell in those elemental stones
Whose various combinations do form the
edifices
Of our world. Be not seduced by those who
mewl
And puke their childish pap, that man is a
whole
And as a whole must studied be, without
Enquiry into the parts that constitute him,
Who bid us look to that phantom world of
dreams
And fleeting fantasies, to find true gold.
How, pray, can you get the measure of a
man?

How bring entire the crude complexity of all
Those shifting, varied bits of him beneath
The clarifying lens of thought? Say
Where is that mortar and that pestle to be
found
To grind his airy emotions, to mash his hate,
Rub down his love and pulverize his grief?
'Tis but fool's gold you'll find and not
That true metal of the philosopher's stone,
if you
Desert th'alembic and crucible of your
laboratory room.
'Tis only meet, therefore, that our
curriculum
Be mine alone to shape.

At this point, another faculty member, SOCIOLOGICUS, starts up and
interrupts ALCHEMICUS.

SOCIOLOGICUS:

Not so! Not so!
My fine, elemental friend! Man lives not
To himself alone, but woven fast into
The deep-hued tapestry of his society.
Each separate thread, the which when seen
alone
Is imageless and blank, becomes a living part
Of a rich tableau when by the weaver's art
It joins the multitudinous warp and woof
And blends its single strand into the whole.
A varied scene leaps out at him who views
The vast panorama of races and creeds,
and rich
And poor, and nations rolled in the ebb and
flow
Of power. Great cities on the plains and
hamlets
In the cultured fields and forests wild do
share

In the ceaseless systole and diastole of our
common life.
Be not seduced by those who loud proclaim
Their mawkish faith each living soul
stands out
Alone against the mob of men, and forms
The elemental center of creation.
In numbers lies the Truth, and we must seek
To learn what sickness is and health,
not from
Th' individual bodies of ailing men
But from a study of the larger body
Politic. And if that body ailing be,
Then must ye purge and bleed and cauterize
The whole. Lift up your sights! Your
patient is
The ghetto, sick abed in festering slums,
Fevered with a pox that cruelly scars us all.
Seek the ounce that saves the pound of cure,
And squander not your love for Man on men.

Suddenly there are loud alarums and excursions, followed by a blinding flash of lightning and a stunning clap of thunder that rocks the foundations of a small teaching hospital across the street, which had originally been built as an open-air seraglio for an early Ostrogothic king who liked to chase his quarry. Then, as the smoke clears, AESCULAPIUS descends from the ceiling. He speaks as follows:

AESCULAPIUS:

Ah, Gentlemen of Bologna, what harsh
debate
Is this that echoes through your learned
halls?
Much that ye say is bold, and I admire
The zeal that drives each one of you to hurl
Aloft his blazoned banner to the skies,
Proclaiming the one true way that straightly
leads
To heaven on earth. I would more sanguine
be
Did I not fear the man of single vision,
E'en bearing gifts. 'Tis true, each brings a
treasure
Great with the power to help our sad
humanity.
But ride it not like some blindered
hobbyhorse,
Lest thy nag stumble and tumble thee
headlong down
Into the narrow ditch of warped bigotry.
Many a blessed boon hast thou, Alchemicus,
Bestowed to heal the ills of human kind,
And many a concept bright with truth to
light

Us on the way to knowledge of our bodies'
Mysteries. But man is more than matter,
And chemistry cannot explain entire
His great madness of poetry and creative
fire.
Where would all thy knowledge of his
atoms be
Were thou not there to know it with thy
mind?
Sociologicus, thou has spoken well
And true. Great is the demand and great
the need,
And we must find a way to spread our wares
That all who want may have their needed
shares.
But gifts are more than wrappings and gay
ribbons,
And if the package empty be of healing
Balm, then all our brave, expensive plans
And deeds were but a tissue, full of nothing,
We are ourselves that healing balm, and all
Our science, all our schemes are but the means
To gain our ends. Physick is a lonely tryst
'Twixt him who hurts and him who heals
and tries
To understand the multifarious circumstance
That caused his ailing patient's cruel pain.

We need both head and heart to practice
well,
And the quality of mercy must not be
strained by dousing it
With chilling draughts of cold, conceptual
thought
That dampen down the fires of human
empathy.
Nor can we keep ourselves aloofly safe
In the fastness of the crowd, to put a
shielding wall
Against the echoes that another's pain calls
up
In us. Ours is an intimate ministry.
Priests we began, and priests must
always be.



Here the manuscript breaks off again, so that we have no way of learning how the debate was resolved. I assume that the matter was referred to an Ad Hoc Committee. It would appear that the play was intended by its author to be a comedy, not a tragedy, for there are indications that it had a happy ending. There is one last fragment that was apparently meant to be the envoy. This is a sonnet in which the faculty wish the graduating students well as they are about to depart. I should like to conclude by reading it to you:

Long have they toiled, these eager lads and
lasses
To learn the secrets of our esoteric lore;
Long labored, till their bulging brains
were sore
Beleaguered by the dully crushing masses
Of facts upon facts we piled on them, the
while
We strove to make them in our image. Long
Have they mutely suffered from our
pedagogic song,
And now they are freed at last from
durance vile,
Shake off their fetters, escape the miry
slough
Of student servitude. Now is the time
For joyous glees, for dance and merry
rhyme!
With gladsome hearts we can in you see how
Our sons surpass the fathers that them
made,
And we are proud to shelter in your shade.

FINIS



The Ethic of Medicine

by Dean Robert H. Ebert

THE OCCASION for a valediction is one of mixed feelings. It is touched with sadness for it means farewell, and yet it has an aura of pleasant anticipation, for it occurs in that brief pause before the next great leap forward into a new life. Each of you may feel some secret apprehension about your ability to meet the next challenge of internship and residency. Having survived the past four years, I can assure you that the rest of life is a downhill coast. More seriously, you would not be here if you had been anything but first rate.

You are at the threshold of a profession ancient in lineage, sometimes honored, sometimes maligned, plagued by a constantly changing body of knowledge, all-consuming in its demands, but possessing one overriding virtue: it is a profession that is never dull. What should I tell you at a time like this? What "truth" can I state which has a half-life of more than five years?

In casting about for a subject worthy of a valediction for the Class of 1967, I was reminded of a subject discussed at a recent conference by Professor Westin of Columbia University. Professor Westin is a sociologist and he has become much concerned with the problem of privacy in a technological world.

It was Westin's premise that technologically it has become a relatively easy matter to accumulate, record, and transmit massive amounts of data. It would be relatively simple to develop a data bank which included large amounts of information about everyone in the United States.

The accumulation and recording of data is a neutral matter, but how such data are transmitted is not neutral. Professor Westin used the example of dossiers on individuals in government and in industry. To whom should information of a private nature be given? The fact that certain information is available to others may profoundly alter the life of the individual. For example, a record of failure or a record of

suspicious action.

This is not a new problem, but one which has changed in magnitude because of the ease of information retrieval and distribution. Professor Westin's concern is how society safeguards the privacy of the individual, and what recourse does the individual have if his right of privacy is invaded and his future jeopardized?

This subject has special pertinence for the physician, for the entire relationship between doctor and patient is, in large part, based on the trust that the physician will respect the confidence of his patient.

During the next several years you will constantly share information about patients with colleagues, but this will be done for professional purposes and is a very different thing from sharing information with others outside the health professions. Your concern must always be what is best for the patient, for you are the patient's advocate. There is enormous danger if the particular relationship between patient and doctor is broken, or is invaded by the manner in which recorded information is used.

If the patient fears that what he reveals will become a matter of record which can be used against him, he is likely to withhold intimate information with a consequent delay in diagnosis and treatment.

Many changes may occur in medicine and the way in which it is practiced, in the manner it is financed, and in the knowledge required of the physician. But one thing must remain unchanged, and that is the respect of the physician for the privacy of the individual for whom he assumes responsibility. No matter what the technological advance, the physician must retain sufficient control of medical information so that it can never be used against the patient. This I believe to be a principle which will be as viable at the time you retire as it is today.



'17



REUNIONS



'22



'27



'32



'37

'17 Leroy E. Parkins

In pleasant and happy circumstances, the Class of 1917 celebrated its 50th reunion. Those present were:

Dr. & Mrs. F. Dennette Adams
Dr. & Mrs. Leslie O. Ashton
Dr. Frank B. Berry
Dr. & Mrs. Thomas D. Cunningham
Dr. & Mrs. Edmund B. Fitzgerald
Dr. & Mrs. Francis C. Hall
Dr. Victor C. Jacobsen
Dr. & Mrs. Moses H. Lurie
Dr. & Mrs. Monroe McIver
Dr. Karl A. Menninger
Dr. James B. Moloney
Dr. & Mrs. Leroy E. Parkins
Dr. J. Newton Shirley
Dr. Joseph K. Surls
Dr. Joseph T. Wearn

After the excellent Alumni Day program, we gathered in the Blue Room of the Harvard Club for cocktails and dinner, with Dr. and Mrs. Robert H. Ebert as our guests. After dinner, the Dean told us of his new duties at HMS. Monroe McIver showed a series of remarkable slides of old and new Iran. He has been a consultant on medical education to Iran for the past several years.

The Class of 1942 generously provided us with champagne. Our toastmaster, Joe Wearn, eloquently expressed our thanks to '42 and to Miss Dorothy Murphy.

On Saturday, we met at the Parkins home in Brookline. After libations and refreshments, there was much reminiscing. It was voted to send a personal note to all who could not attend the reunion. We all agreed to have another reunion in five years and look forward to meeting old friends again.

'22 G. Colket Caner

Twenty-nine members of the Class of 1922 met for the 45th reunion.

In spite of the rain on Friday, we had our picture taken and attended the interesting morning and afternoon talks. Friday evening we met at Howard Sprague's for cocktails and an excellent dinner. Special recognition should be given to the Lums who came from California and to the Findlays from Arizona. A number of songs and stories added to the conviviality.

On Saturday, we spent the day at the Caner place in Manchester. It was cool in the morning, but the weather was

sufficiently warm in the afternoon to have our clambake outside. A few members and their wives played croquet, and although horseshoe pitching was available, nobody participated.

We all look forward to our 50th.

'27 Sidney Farber

Fifty-two members of the Class of 1927, and 40 wives, registered for the fortieth reunion. They came from 20 States. . . . the John Scudders had just returned from India.

Friday morning the Class joined all the returning Alumni to listen to a program arranged and addressed by our classmate, Langdon Parsons, in whose record as Director of Alumni Affairs we have great pride. That evening 40 members and 33 wives gathered at the Penthouse of Holyoke Center, where a magnificent repast was served by the former chef of General Rommel. Lang Parsons did a superb job as Toastmaster, and called on Dorothy Murphy, an Honorary Member of the Class, for remarks that were most appreciated. It was recognized that hers has been a unique contribution to Harvard Medical School. John Scudder gave a brief but exciting picture of medical progress in India, Israel, and other parts of the world which he had just visited. The Faculty guest, Chester Jones, who was remembered by our Class as a magnificent teacher and physician, gave a delightful presentation. After dinner Dean Ebert spoke of the relationship of the Alumni to the welfare of the School. Dr. and Mrs. Robert Ebert were both voted Honorary Members of our Class.

On Saturday afternoon the Outing and Clambake was held in the woods surrounding the beautiful Newton home of our gracious hosts, Dr. and Mrs. Parsons. The rain had cleared and the class enjoyed the hospitality so generously provided. All appeared genuinely happy that they had come, and regretted only the absence of those who were not able to join us.

'32 Claude E. Welch

The Class of 1932 held a most happy reunion, and 50 members, nearly all accompanied by their wives, were present for at least one of the activities. A picture of the members taken in the tent after the luncheon proved to be unpublishable, since no one could stop shivering. Consequently, a second

photograph was taken that evening after dinner in the Hotel Somerset, when the circulation had been restored by suitable means.

The President and the Treasurer of the Alumni Association, Wesley W. Spink and Carl W. Walter, were both present at the Class dinner, so that all remarks made by the members were necessarily most circumspect. Nevertheless, under Class President Cutts' stimulation, each one rose for a few remarks and stories that will never be published in the HMAB.

On the following evening, we all gathered again on Carl Walter's beautiful country estate. Dorothy Murphy and a number of faculty members were present, and letters were received from many others who were unable to be with us. We were all greatly impressed, not only by the clambake, but particularly by Carl's remarkable accomplishments, with his gadgets about the house, and with his avocation of Fenwall, Inc. A very interesting movie was presented, showing how Carl has developed a method whereby any explosions from outside electrical sources encountered by airplanes may be immediately negated by his gadget.

We missed our other classmates and hope that there will be a full complement present in 1972. Certainly all who came this time will never want to miss another reunion.

'37 Joseph R. Frothingham

Midst snow, rain, hail, sleet and much wind, the Class of 1937 gathered for its 30th reunion.

On Friday evening, 50 members gathered at the Harvard Club for a dinner dance, with Dr. and Mrs. William B. Castle '21 as our guests. The superb orchestra, selected by Dot Murphy, rendered many of the tunes of our era. John Crandon's work on the traps kept things lively, and the entire evening was marked by complete informality, and no speeches or forced entertainment seemed necessary.

The sun finally shone on Saturday, and some of us attended the Class Day exercises. Others slept. The Medical School hosted an excellent luncheon in the Quadrangle.

In the afternoon, we sojourned to the delightful home of George Gardner in Duxbury for a delicious clambake. Once again, our gracious hosts had

everything arranged for our complete comfort, and we are most grateful to them.

Special mention should be given to the Henry Works who came from California; to Bob Brown from Denver; and to the Dean Woolseys from Florida.

The finest moment of the reunion was the announcement that Al Erdmann's family had established a fellowship in his honor. Al's wife and four children were present and we had the additional pleasure of seeing Al's oldest son, John, graduate with honors in this year's class at HMS.

It was, all in all, a most pleasant and successful reunion!

'42 William V. McDermott

Twenty-five years ago the Class of 1942 left the Harvard Medical School for appointments in the respective hospitals of their choices, most of them subsequently to enter the Armed Forces for service in World War II. Of the 133 graduating members of the Class, 62 returned to Boston for the 25th Reunion festivities. In order to induce the appropriate nostalgia for by-gone days in Boston, the local Committee on Arrangements organized a three-day Northeaster storm with steady rains and winds of gale force in order to greet the returning members appropriately. Festivities opened on Thursday evening at the Harvard Club, and the Class was joined by their invited guests for the evening—Dr. and Mrs. Robert Ebert, Dr. and Mrs. Edward D. Churchill, Dr. and Mrs. John Enders, Dr. Langdon Parsons, and Miss Dorothy Murphy. Following a report by our vigorous class agent, Oglesby Paul, and a survey of alumni activities by Lang Parsons, director of the Alumni Association, Dean Ebert addressed the Class briefly, thanking them for their continuing loyal support and outlining the Harvard Medical School of the future. Following this minimum of formalities, the Class broke up into informal groups to renew acquaintances and to catch up on friends' activities.

The Dinner Dance at the Country Club on Friday evening was perhaps the highlight of the reunion and proved to be a tremendous success.

Following Class Day activities on Saturday, we were transported by bus to the Castle Hill Foundation for a clambake. The Northeaster had finally

disappeared out to sea, and the pleasant weather and environment hopefully left the departing members of the Class with a less dismal view of the Boston climate.

During the Alumni Day activities, Glen Leymaster, President of our Class presented to Dr. Ebert a check which included the contributions of the Class during the 25th Reunion year in the amount of \$22,306, bringing the total contributed by our Class since the inception of the Alumni Fund in 1952 to the sum of \$69,568. In accepting the Class Gift, Dr. Ebert stressed how important this type of unrestricted money was to the School, in order that scholarship and loan support could be provided to students who otherwise could not possibly attend medical school.

The Class thanks Miss Dorothy Murphy for the magnificent arrangements made by the Alumni Office under her direction.

'47 John W. Littlefield

Seventy-five members of the class of 1947 met for their twentieth reunion at the Somerset Hotel for cocktails and a dinner-dance on Friday night, and at the Dedham Country Club for a clambake and dancing on Saturday night.

The hit of the weekend was Jack Munro's awarding of prizes to classmates who came from the greatest distance—Charles Beachley from Texas and Clinton Piper from Washington. Other prizes were given for various activities which cannot be detailed in the pages of the *Bulletin*.

The weather changed from miserable to tolerable by Saturday night. This failed to deter the traditional golfing set, and indeed, encouraged liquid consumption by a Class already notorious for its prowess in this regard.

Therefore, pending better arrangements on the weather, we all agreed to reconvene for our twenty-fifth in May, 1971—hopefully to be joined by those who could not make it this time.

'52 James J. Feeney

Boston, after experiencing the coldest May in 50 years, greeted the Class of 1952 at its fifteenth reunion with a genuine Northeaster. Sixty-five classmates and their spouses shivered through registration, the class picture, and luncheon wet but happy under the canvas on the Quadrangle.

The "O! be joyful" preceding the dinner dance at Pier 4 provided an overdue visceral and cerebral warmth. Before the evening was over, Jim Donovan finally convinced Cesar Rosa-Perez who came from San Juan, that the snow and sleet in Boston Harbor was for real.

On Saturday, Bill Cochran provided hospitality at his "summer" home in Scituate. Bill and Mary graciously alternated the guests between the tent and the house and there was only one reported case of frostbite.

Onward to the twentieth!

'57 David E. Leith

The tenth reunion of the Class of 1957 was ushered in by a wild Northeaster, with a rainy, cold Friday for the first time on a reunion weekend in the memory of man and Dottie Murphy. Class members from California and the Midwest expressed their delight, and borrowed sweaters.

All was snug and warm, however, at the dinner-dance at the Cambridge Boat Club Friday evening. The open bar was patronized in a reserved way; the leftovers (six cases) were loaded into Harry Senger's car at midnight and have not been seen since. One-hundred and two roast beef dinners were served to the class members, their wives and guests. This means that at least 99 people and Dave Hall were present. After dinner a series of short addresses were delivered by volunteers, and, after Abbot Miller told a joke, the festive group repaired again to the bar, while the hitherto subdued orchestra swung into dance numbers.

Analysis (body-composition, not the other kind) of the class showed that nobody had changed a bit. Well, maybe some! On the whole, it was clear that the Class of '57 has lost, not gained weight over the years. This reflects the driving personalities and seeking of responsibilities which characterize us, no doubt.

On Saturday, the group traveled to Plymouth, where the afternoon and evening were spent in the storm-tossed White Cliffs, with an ample clambake, bar, and more talk to keep us warm.

The turnout was large, the arrangements (thanks largely to Miss Murphy and the Alumni Office) good, and the reunion a pleasure. We hope that the fifteenth will be as successful.



'47



'52



'42

'57

'62



'62 P. Frederick Sparling

The Class of 1962 had a very pleasant reunion, despite the record northeaster which struck Boston shortly before festivities started. Approximately 40 hardy souls were present at various times during the two days, with the loyalty award going to Dick Dobrow, who came from the jungles of Florida for the occasion. Others came from outposts as distant as New York, but most were among the still large group in residence in the Boston area.

We reconvened on Friday evening at the Harvard Club, for a fine evening

of cocktails, roast beef, dancing, and laughter. Most were content to spend the evening talking with their old cronies, much to the consternation of the barman, whose business suffered, and the band leader, who felt his efforts were unappreciated. It was clear that most of the group were eagerly looking forward to completion of their training, in part due to the pressures of steadily growing families. The dentists, who are all out in the world now, were overheard complaining of taxes and falling stock markets.

Only a few attended the Saturday Class Day luncheon, which was highlighted by a huge cheer as the sun

broke out for the first time in days. That afternoon, the Earle Chapmans kindly opened their home and grounds to us, as is their custom for the fifth reunion. A keg of beer helped spur the combatants in a touch football game to unthought of heights of athletic achievement, for which some paid dearly a day or two later. A few miniskirts spiced the ladies' softball game. The return of cold weather forced the group inside for a barbecued chicken dinner, which was followed by singing around the piano.

All agreed it was fun to get together again. Many thanks are due Miss Murphy and the alumni office staff.





a POX of GREAT CONSEQUENCE

by Paul J. Davis '63

It is patently clear that at its present rate of growth, the Committee Meeting Philosophy will throttle all of medicine by 1968 or earlier. Several institutions, for example, have had perforce to curtail sharply their clinical and research programs in order to form more committees. We now recognize a number of cogent reasons for forming more committees, such as the holding of meetings, the utilization of otherwise unoccupied conference room space, and the recording, editing and publishing of the minutes. It is the latter, of course, from which the very fabric of future meetings will be woven. Recently, so many new committees have been formed at our own institution that we have been forced to increase the size of our faculty.

An analysis of the committee and meeting philosophy may be helpful in order to understand just what is going on. First, there are a number of committee types, many with Latin names, all of which are created to sustain a Specific Part of the Whole (SPW₁, SPW₂, etc.). A few meetings suffice, however, to show that the sustenance of only a Specific Part of the Whole is unsatisfactory because there are so many Interdependent Parts (IP, a function expressing SPW₁:SPW₂). The recent exciting implementation of the concept of the Conference Committee (CC)—committees to interrelate interdependent committees—thus fills a long-present, but only recently-recognized gap.¹

The usefulness of committees is an immutable principle. Through meetings of committees, it is possible to learn who is out of town, to apportion the day into a series of ad infinitum *ad hoc*'s, and to provide economic support for a corps of otherwise unemployed personnel who process the minutes. Another use is the formation of the quorum, which is to say, the basic unit of our society.

A committee is the logical extension of the seminar concept.² Meetings of committees have formats, and without the format, the organization of the committee breaks down into intellectual dialogues. The format includes both the agenda and the refreshments. Agendas have been well-described elsewhere,³ but the refreshments are a source of critical concern to us in this era of spoiled mayonnaise and buffets. Indeed, it is safest to bring a sack lunch from home. The opprobrious noise, however, generated by the rattling of waxed paper and brown bags during committee meetings, has unsettled every one of us at one time or another, and a plastic container of Jell-O, yogurt, or a thermos of bouillon is a happy compromise.

Meetings, of themselves a purpose for the existence of committees, also subserve certain other functions unique to our times. First of all, depending upon the size of the committee, meetings can lend either modest or impressive respectability to an otherwise inconsequential cause, problem, or discussion. An increased number of committees invariably leads to an increased number of causes and problems, and not vice-versa. Secondly, depending upon the inattention of committee members to the resolutions passed, meetings can marshal support for absolutely unthinkable positions,⁴ and can rationalize the thoroughly unaccountable. Thirdly, meetings can delay action on critical matters until such a time as they are either noncritical, or so serious that another committee must deliberate them. Finally, as we have thankfully recognized for many years, committees have immoderate potential for the diffusion of responsibility. The ultimate expression of this is, of course, the Anonymous Committee, a tactic seldom resorted to now because the burgeoning size of the average committee provides functional anonymity.

The action of the committee, interestingly, is entirely independent of the committee members. This is a phenomenon one is forced to accept when one investigates the Action of a Committee. First, it is apparent that few members of the committee seem to have been present at the meeting when the Action was taken. (This, of course, is obvious; had many members of the committees been present, no action would have been taken.) Secondly, members who were present recall that the Action was actually taken by another committee. Finally, a majority of the committee members did not in fact support the Action taken.

Committee meetings tend to be longest when members have important business elsewhere, and intend to leave early. The duration of committee meetings can be described in mathematical terms.⁵ It varies directly as the square of the number of committee members present, and inversely as the number of issues to be discussed. The latter is an interesting paradox which has been subjected to an inordinate amount of study, particularly by Conklin⁶ and deGheyn.⁶ The basic principle seems to be that the committee reacts to a long agenda with a maneuver call slough.⁷ Realizing it cannot possibly discuss all of the agenda, the committee calls off its meeting, hoping everything will iron itself out. On the other hand, a committee meeting devoted to a single issue is potentially very dangerous: its resemblance to an iceberg has been suggested by Conklin in his *Committee-Berg Papers*. Slides, charts, and exhibits appear, prepared statements materialize, and parliamentary tactics may be resorted to.

The strategy of committee meetings is detailed elsewhere.⁸ Several unpublished maneuvers are of interest. One is the scheduling of meetings when most of the committee is out of town. Favorable dates are in July and August, or during the Atlantic City meetings. A single committee member—designated by lot to remain behind—convenes the committee and dismisses it because of the lack of a quorum. These additional meetings are entered into the record, draw an extra appropriation, and make the committee appear far busier than it actually is. Another ploy is that of convening small committees in large amphitheaters with bad acoustics and soft upholstering; these circumstances are unnecessary unless it appears that certain committee members are hell-bent on making a critical decision on a topical matter. (Decisions on irrelevant matters, it may be added, always are encouraged, and indeed, they form the substance of the minutes of the previous meetings.)

It becomes obvious that we are now operatives in a quorum-based society. To some observers, this is a step forward; to other observers—individuals who, in another day, might be called Individualists—the committee is a pox of great consequence. However, it seems hard to conceive that the Committee Meeting Philosophy and medicine can productively co-exist.

¹ Interestingly, the number of Conference Committees (CC) needed by a given faculty to relate interdependent committees (IP) already in existence is given by the formula:

$$CC = \frac{IP^2 - IP}{2!}.$$

This formula has been questioned by Neary.

² The details of this relationship are discussed in Conklin's *Pocketbook History of the Seminar Concept* (still out of print).
³ deGheyn, J. *L'Agenda et autres oeuvres*. Zurich: Farquhar, 1966.

⁴ The demand for committee members who are hard-of-hearing far outstrips the supply.

⁵ deGheyn's mathematical description of the duration of committee meetings has left a lot of people cold, and will not be recapitulated here.

⁶ Working independently in Neary's laboratory.

⁷ Slough, in this context, was first described by Robert Harry Neary in *The Committee as a Phenomenon*, a reading at Expo '67, upon which I have drawn all too heavily in this discussion.

⁸ Conklin, H. "Hippies in the Square," ch. 12 in *A Life of deGheyn* (unpublished).



Beetles



and

Books



by George E. Gifford, Jr., M.D.

IF you have ever tried to catch a butterfly with an umbrella, you can appreciate the skill of Thaddeus William Harris, M.D. (1795–1856). As a biographer noted, “he had the quick step, the roving eye and the prompt fingers of a born naturalist; he could convert his umbrella into a net, and his hat into a collecting box.” The top hat and umbrella were appropriate to the Harvard Librarian (1831–1856); but the skill with the umbrella marks him as an important early figure in American entomology.

Harris was born in the doubtless cold and dreary parsonage of the First Congregational Church in 1795 to the Reverend Thaddeus Mason Harris, D.D. and his wife Mary. The divine published 58 sermons and in 1793 a *Natural History of the Bible* which attempted to describe every animal, plant, and precious stone in the Scriptures. The natural history interest was also pursued by Mrs. Harris—she raised silk worms and suppld herself for ten years with sewing silk. Perhaps it was the parsonage that Harris remembered when he wrote about termites:

A colony of them was established under a large slate stone, placed for a door-step to an old house where I once lived. From this place they made covered ways to the threshold, sills, and floor, which they perforated in various directions, without, however, being exposed to light. When the time for swarming came, which always happened in the evening and night, the stone would be covered with a moving mass of winged males and females, among which the toads were busily employed in making an evening meal of them; but although the toads eat hundreds of the insects, the number of the latter seemed very little diminished. When morning came, however, not one of this countless multitude remained; all that escaped their natural enemies had flown away in search of new dwelling places.

At sixteen Harris entered Harvard College. At that time the College offered no direct instruction in Natural History, except for the slight lectures of Professor W. D. Peck, for a special fee. At any rate, Harris wrote of Peck, “It was this early and much-esteemed friend who first developed my taste for entomology, and stimulated me to cultivate it.”

After graduation from Harvard College, he took a medical degree in 1820. He attended the Massachusetts Medical College on Mason Street which had been built in 1816. His instructors were Dr. John Collins in anatomy and surgery, Dr. James Jackson in physic, Dr. John Gorham in chemistry, Dr. Jacob Bigelow in botany and materia medica, and Dr. Walter Channing in obstetrics. The material must have been didactic without hospital experience; the Massachusetts General opened in 1821.

In 1824 Harris married Catherine Holbrook of Milton, Massachusetts, and began to practice with his father-in-law, the distinguished Amos Holbrook. He lived in the famous Suffox Resolves House, where the Resolves were voted and signed by members of the country convention in the fall of 1774, and rushed to Philadelphia by Paul Revere.

Harris was not fond of the practice of medicine and never attained a lucrative practice. In 1829 he wrote to his friend Dr. Nicholas Marcellus Hertz, “my leisure moments are principally employed in collecting and preserving such (insects) as I can discover, in order to replenish my cabinet of duplicates.” That same year Harris wrote again to Hertz who had urged him to come South: “as to the invitation respecting a professor’s chair, I can but repeat what I once

mentioned, that my qualifications are not adequate; but if the climate should admit, I could prepare myself for the department of obstetrics or materia medica. Some experience for ten years in the former, and my knowledge of botany, and necessary acquaintance with the manipulation of drugs, would not render it difficult to attain, in a short time, a tolerable knowledge of either of these branches.”

The post of Librarian of Harvard College became vacant in 1831 and Harris gladly accepted it. Although it was far from being a sinecure, the position had its advantages as well as its disadvantages. The care of the 30,000 volumes left him more time for his insects and correspondence with other entomologists such as the great Thomas Say (1787–1834) and J. L. LeConte (1825–1883). When Harris moved to Cambridge he occupied the house that had been the residence of his great grandfather, Thaddeus Mason.

In 1831 Harris prepared a catalogue of insects which constituted the first attempt in the country to enumerate and classify American insects on a large scale. It included some 2,300 species.

In 1837 Harris took charge of the department of Natural History at Harvard and performed the duties of the chair until the appointment of a permanent instructor—Asa Gray—as Fisher Professor of Natural History in 1842. An official account of Harris as an instructor is given in the President’s Report:

The place vacated by Mr. Nuttall remaining still unsupplied, the instruction in this Department was again given to T. W. Harris, M.D., the librarian, at the request of the Corporation. The exercises were for Seniors, and consisted of twenty recitations from the whole Class in Smellie’s *Philosophy of Natural History*, each of them accompanied by brief illustrations of Zoology; and fourteen lectures on Botany, the attendance on which was voluntary, about one half the Class usually present. The recitations were given in the second term, occupying one hour each in the afternoon, three days in a week; and the lectures in the third term, one hour in the afternoon four times a week.

Apparently the emphasis was on insects; an account of Harris says he “was so simple and eager; his tall spare form and his face took on such a glow and brightness; he dwelt so lovingly on antennae and tarsi, and handled his little insect martyrs so fondly, that it was enough to make one love this study for life beyond all branches of natural science.”

One of those Harvard seniors of 1837, lectured to in Massachusetts Hall, was the shy Henry David Thoreau, who became a life-long friend of his teacher. Harris once complained that Thoreau would have made a splendid entomologist if Emerson had not spoiled him. Harris’s course was the only science course that Thoreau completed.

In 1831 Harris had prepared a section of “Insects” for the *Catalogue of The Animals and Plants of Massachusetts* (1833), which was published as part of Edward Hitchcock’s *Report on the Geology, Minerology, Botany and Zoology of Massachusetts* (1833). In 1837 Harris was appointed a member of the scientific commission to make a more extended survey, and as a member of this commission, he wrote his *Report on the Insects of Massachusetts Injurious to Vegetation*. Harris received only \$175 from the State of Massachusetts for the preparation of this famous report, but it was the first instance of the employment of an entomologist in America. Reprinted by the author in 1842 as *A Treatise on Some of the Insects of New*



Luna Moth



Polyphemus Moth

England which are Injurious to Vegetation, it was again published in a revised form in 1852.

In connection with the publication of the famous treatise by Dr. Harris on *Insects Injurious to Vegetation*, we find a characteristic comment. Surely Thoreau must have had his tongue in his cheek when he penned these words:

We accuse savages of worshipping only the bad spirit, or devil, though they may distinguish both a good and bad; but they regard only that one which they fear, and worship the devil only. We too are savages in this, doing precisely the same thing. This occurred to me yesterday as I sat in the woods admiring the beauty of the blue butterfly. We are not chiefly interested in birds and insects, for example, as they are ornamental to the earth and cheering to man, but we spare the lives of the former only on condition that they eat more grubs than they do cherries, and the only account of the insects which the State encourages is of the "Insects Injurious to Vegetation." We too admit both a good and bad spirit, but we worship chiefly the bad spirit, whom we fear. We do not think first of the good but of the harm things will do us.

The catechism says that the chief end of man is to glorify God and enjoy Him forever, which of course is applicable mainly to God as seen in His works. Yet the only account of its beautiful insects—butterflies, etc.—which God has made and set before us which the State ever thinks of spending any money on is the account of those which are injurious to vegetation! This is the way we glorify God and enjoy Him forever. Come out of the herd and behold a thousand painted butterflies and other beautiful insects which people the air, then go into the libraries and see what kind of prayer and glorification of God is there recorded. Massachusetts has published her report on "Insects Injurious to Vegetation," and our neighbor the "Noxious Insects of New York." We have attended to the evil and said nothing about the good. This is looking a gift horse in the mouth with a vengeance. Children are attracted by the beauty of butterflies, but their parents and legislators deem it an idle pursuit. the parents remind me of the devil, but the children of God. Though God may have pronounced His work good, we ask, "Is it poisonous?"

After Harris' death, an admirable new edition of his work was ordered by the Massachusetts legislature. It was published in 1862. It was well-illustrated and the drawings by Antione Sonrel and the wood engravings by Henry Marsh have never been excelled. From the start, the influence of this book was very great. Harris' style was simple and lucid. Probably no other book on natural history published in the United States during the 19th century was better done.

The illustrations for this edition have received high praise

by an historian of wood-engraving in America:

The insect . . . drawn from nature by Sonrel and Burckhardt, needed most absolutely exact rendering, for the representation not only of form and color, but of different textures also, and the engraver, Henry Marsh was therefore fully justified in his microscopic treatment. No such book had ever been done before, nor will it ever be surpassed . . . It is work not only of patience and remarkable eyesight, but also of true artistic skills showing too, in the comparison of the steel plates with the wood cuts, that there are powers of expression in wood which cannot be equalled by any rival process.

Everyman has a race with oblivion; Harris won his race. His insect collection, perhaps the oldest in the United States, is preserved in Harvard's Museum of Comparative Zoology. A butterfly found in damp meadow areas where the Blue Flag grows, bears his name, Harris' Checkerspot (*Melitaea harrisii* (Scudder)). *The Dictionary of American Biography* has labeled him the "father of economic entomology." Perhaps the most appropriate tribute was found by this author on a now broken and removed tablet, at his home in Milton.

In this house from 1824 to 1831 dwelt Thaddeus William Harris, M.D., botanist, entomologist, and finally librarian of Harvard College. In each capacity he won for himself fame and gratitude. He had the modesty and unselfishness of true science, with what may be rightly called the true chivalry of spirit.

BIBLIOGRAPHY

- Dictionary of American Biography*, vol. VIII, pp. 321-322.
Dow, R. P. "The Work and Times of Dr. Harris," *Bulletin of the Brooklyn Entomological Society*, vol. VIII, pp. 106-118, Dec., 1913.
Encyclopedia Americana, vol. 13, pp. 724-725.
Grote, A. R., "The Rise of Practical Entomology in America," *Twentieth Annual Report of the Entomological Society of Ontario*, 1889.
Harris, Edward D., "Memoir of Thaddeus William Harris, M.D.," *Proceedings of Massachusetts Historical Society* 19:313-322, 1881-1882.
Howard, L. O., *A History of Applied Entomology*. Smithsonian Miscellaneous Collections, vol. 84, pp. 30-35, 1930.
Scudder, Samuel H., *Entomological Correspondence of Thaddeus William Harris, M.D.*, Boston: Boston Society of Natural History, 1869.
Smallwood, William M. and Smallwood, Mabel S., *Natural History and the American Mind*, New York: Columbia University Press, 1941, pp. 182, 304, 308, 344.
A copy of a letter written by T. W. Harris to Thomas Affleck about termites, Nov. 10, 1849. Published by Antimite Co., Saint Louis, Mo., July, 1956. .



ALONG THE PERIMETER

HSDM Dean Resigns; Becomes John Rock Professor of Population Studies

Dr. Roy O. Greep, Dean of the Harvard School of Dental Medicine since 1952, resigned on July 1, 1967, to accept an appointment as John Rock Professor of Population Studies in the Faculty of Public Health at Harvard, and as Director of the Laboratory of Human Reproduction and Reproductive Biology in the Harvard Medical School.

Dr. Robert H. Ebert, Dean of the Faculty of Medicine announced that Dr. James Howard Oaks (D.M.D. '56), Associate Dean for Student Affairs in the HSDM, will become Acting Dean of the Dental School. Dr. Oaks has been associated with the Dental School since his graduation at which time he received the Gold Medal Award of the Harvard Dental Alumni Association for "all-round scholastic excellence." In addition to his administrative responsibilities, Dr. Oaks is also lecturer on dentistry.

Dr. Greep will become a member of the Center for Population Studies of the Harvard School of Public Health, which is directed by Dr. Roger Revelle, and also a member of that School's Department of Demography and Human Ecology. His service in the Department of Anatomy of the Faculty of Medicine will continue.

The importance of the role to be filled by Dr. Greep was emphasized by Dr. John C. Snyder '35, Dean of the School of Public Health and head of the Department of Demography and Human Ecology, when he said: "Dr. Greep has long been in the first rank of those concerned with the serious consequences of uncontrolled human fertility and has made major contributions to scientific knowledge in this field. He will occupy a key position of great significance to Harvard's comprehensive attack on populations problems. His leadership of the laboratory and his participation in the work of the Center and the related department in the School of Public Health will bring these activities in population research and teaching into sharp focus."

Dr. Greep joined the Harvard School of Dental Medicine as Assistant Professor of Dental Science in 1944, and became Professor of Dental Medicine

in 1949. Since 1955 he has been Professor of Anatomy in Harvard Medical School's Department of Anatomy.

During the past 20 years, Dr. Greep has been engaged in studies involving the anatomy and physiology of the endocrine system. In this period he has made notable contributions to the fundamental knowledge of the biology of the endocrine glands and the treatment of endocrine disorders. Among his important contributions was the discovery of the specificity of primate growth hormone which led to the successful and widespread use of growth hormone in man; the elucidation of the mechanism of function of the adrenal cortex; the basic physiology of the pituitary gonadotropic hormones which contributed to the successful development of birth control pills; and the influence of adrenocortical hormone on tooth eruption rates. In recent years Dr. Greep has been involved in studies of the secretory mechanisms of the corpus luteum in animals.

He was born in Longford, Kansas, and received the S.D. degree from Kansas State College in 1930; the S.M. and Ph.D. degree from the University of Wisconsin in 1932 and 1934 respectively; the M.A. degree (hon.) from Harvard in 1946, and the D.Sc. (hon.) from the University of Buffalo in 1960.

Dr. Greep is a member of the Expert Advisory Panel on the Biology of

Human Reproduction, World Health Organization; the Endocrinology Study Section, National Institutes of Health; The Medical Advisory Board, National Pituitary Agency; and has served on the Fellowships Selection Committee of The Lalor Foundation. He is former president of The Endocrine Society, and served as managing editor and later as Editor-in-Chief of the Society's journal, *Endocrinology*, from 1952 to 1962. He was elected a member of the Board of Trustees of the Worcester Foundation for Experimental Biology in 1965; served as chairman of the Committee on Dentistry, National Research Council's Division of Medical Sciences from 1956 to 1961; and, in 1965, he was chairman of the Advisory Committee on Personnel for Research, American Cancer Society.

DNA Expert Appointed

Charles A. Thomas, Jr. has been appointed professor of biological chemistry at Harvard Medical School. Professor Thomas's work will focus on the rapidly developing area of nucleic acid research and specifically, on the problems related to the mechanism of nucleic acid replication.

Since 1954, when he received the Ph.D. degree in physical chemistry from Harvard, his interests have centered on an investigation of the anatomy of the extremely long bacteriophage DNA molecules. Because of their great length, it has been difficult to determine their molecular weight. In collaboration with A. D. Hersey, Prof. Thomas determined, by autoradiographic means, the molecular weight of T2 DNA, which has become one of the fundamental yardsticks in measuring large DNA molecules. His subsequent studies have led to the development of valuable techniques for the isolation of these molecules from cells and viruses.

After graduating from Harvard, Prof. Thomas was a National Research Council Fellow, and later, instructor in physics at the University of Michigan. In 1957 he joined the faculty of John Hopkins University as assistant professor of biophysics. In 1960 he became associate professor, and in 1964 professor of biophysics.



Physiology

David H. Hubel has been appointed the first George Packer Berry Professor of Physiology in the Faculty of Medicine. He has also been named head of the department of physiology, succeeding Eugene M. Landis, who has retired after 24 years as department head.

Dr. Hubel has been professor of neurophysiology since 1965. His research has focused on the clarification of basic neurological mechanisms in higher animals and man, and particularly, on the role of the nervous system in vision.

Working in close collaboration with Torsten N. Wiesel, professor of physiology at HMS, Dr. Hubel has detailed the manner in which the visual pathway transmits and processes complex information. They have been concerned with how the cerebral cortex analyzes the form and color of visual images. In experiments with cats, Drs. Hubel and Wiesel have found that the response of the nervous system to light, and especially to specific shapes and forms, can be seriously impaired if there is vision deprivation in the first few months of life.

Dr. Hubel received the M.D. degree from McGill University in 1951, and joined the Faculty at HMS in 1959. He is a member of the American Physiological Society and the American Academy of Arts and Sciences.

The George Packer Berry Professorship honors the former Dean of HMS who served from 1949 until his retirement in 1965. Dr. Berry is professor of bacteriology, emeritus. The Berry Chair was established by the President and Fellows of Harvard College with a gift from The Commonwealth Fund "for the endowment of a Professorship in the basic medical sciences."

Peterson '56 Named Dean

Chase N. Peterson '56 is Dean of Admissions and Financial Aids to Students in Harvard College. As such, he is responsible, under the guidance of a Faculty committee, for the selection of each year's entering class, and for the program of scholarships, loans and part-time work. Dr. Peterson is clinical instructor at the University of Utah Medical School, and Director of the Medical Education Committee of the Latter Day Saints Hospital.

Medicine

George W. Thorn is Hersey Professor of the Theory and Practice of Physic, and Head of Harvard's department of medicine at the Peter Bent Brigham Hospital. On July 1, 1967, he became the second member of the Faculty of Medicine to hold two named professorships when he was appointed Samuel A. Levine Professor of Medicine.

In naming Dr. Thorn, Dr. Ebert commented that "he meets, in every way, the objectives for which the Levine Professorship was established. A substantial portion of Dr. Thorn's current research, teaching interests, and activities relate primarily to the cardiovascular field."

The Levine Professorship was established by the University in 1954 with a gift from the late Charles E. Merrill, a New York investment banker, to honor his personal physician, the late Samuel A. Levine. The first incumbent of the Chair was C. Sidney Burwell '19 who held the Professorship from 1955 until his retirement in 1959.

Anesthesia

Leroy D. Vandam has been named professor of anesthesia at Peter Bent Brigham Hospital. Since 1954, he has been director of anesthesia at the Hospital, and since 1957, clinical professor of anesthesia at Harvard Medical School.

His distinguished career has encompassed all aspects of the field of anesthesia—operative surgery, inhalation therapy, intensive care, respiratory resuscitation, and consultative management of problems in pain perception. Dr. Vandam's research endeavors have centered on congenital heart disease, and with Dr. Richard Bing, he was the first to document certain aspects of hemodynamics and cardiac output in patients with the disease.

Dr. Vandam is editor-in-chief of *Anesthesiology*, and chairman of the committee on anesthesia of the National Research Council. He has served as president of the Massachusetts Society of Anesthesiologists, and of the Association of University Anesthetists.

Judah Folkman '57 Youngest Professor at HMS

M. Judah Folkman '57 has been promoted to professor of surgery at Harvard, chief of the General Surgical Services at The Children's Hospital Medical Center, and head of the

School's department of surgery at the Hospital.

Dr. Folkman's research on isolated perfused organ systems is well-known. In 1965, he received a Research Career Development Award from the National Cancer Institute, and funds to work further with the organ perfusion technique. He is currently developing new methods of organ culture to study human solid tumors and leukemia.

Last year, while working with the various circuits of tubing used in his experiments, Dr. Folkman found that all of the anesthetic gases and vapors may be diffused into the bloodstream through a fine tube made of silicone rubber placed in a vein. He also discovered that this same intravenous catheter could be used to measure the concentration of blood gases in less than one minute.

Dr. Folkman is a diplomate of the American Board of Surgery, and a member of the Society of University Surgeons and the New York Academy of Science.



Two Professors of Psychiatry Appointed at HMS and MGH

In the field of psychiatry, any dichotomy between clinical investigation and laboratory research is antithetical to the aims of the discipline itself. To insure that clinical investigation and laboratory research remain integral parts of the far more important whole, two new tenure professors of psychiatry have been appointed at Harvard Medical School.

Dr. Eisenberg



Dr. Leon Eisenberg, an outstanding clinician, is professor of psychiatry and chief of the psychiatric service at Massachusetts General Hospital. Dr. Seymour S. Kety, a distinguished neuroscientist, is professor of psychiatry at Massachusetts General Hospital.

Dr. Eisenberg received the M.D. de-

gree from the University of Pennsylvania School of Medicine in 1946, and since 1961 has been professor of child psychiatry at Johns Hopkins University.

His special interest is in child psychiatry, and he has long been concerned with the social aspects of mental health. Dr. Eisenberg has investigated the effectiveness of pharmacologic and psychologic treatment of children. He found that stimulant drugs are effective in the treatment of hyperkinetic behavior disorders, a discovery that constituted an important advance in childhood psychopharmacology.

Dr. Eisenberg is certified in psychiatry and child psychiatry. He is the editor of the *American Journal of Orthopsychiatry*, and is on the editorial board of the *Journal of Child Psychology and Psychiatry*, the *Journal of Psychiatric Research*, and *Child Development*.

Dr. Kety received the M.D. degree in 1940 from the University of Pennsylvania School of Medicine, and since 1956 has been chief of the laboratory of clinical science at the National Institute of Mental Health. During 1961-62, he was Henry Phipps Professor and chairman of the department of psychiatry at Johns Hopkins University School of Medicine, and psychiatrist-in-chief at The Johns Hopkins Hospital.

His research interests have centered on the circulation of the brain, and he determined cerebral blood flow in man using low concentrations of nitrous oxide. This discovery opened the way for the first quantitative chemical

measurement of this important physiologic function. Dr. Kety's current interest is in the field of catecholamine metabolism and the central nervous system. By studying the relationship of the catecholamine metabolism and distribution within the brain, and the state of affect, he hopes to relate chemical events to behavior.

Dr. Kety was president of the Associ-

Dr. Kety



ation for Research in Nervous and Mental Disease (1965), and of the American Psychopathological Association (1965). He is chairman of the Committee on Brain Sciences of the National Academy of Sciences, and editor-in-chief of the *Journal of Psychiatric Research*.

Glaucoma Authority Becomes Professor

Walter M. Grant '40 has been promoted to professor of ophthalmology from associate professor, the position he has held since 1955. He is also the director of the Glaucoma Consultative Service at the Massachusetts Eye and Ear Infirmary.

His early studies were concerned with intraocular fluid formation, an interest which led him naturally into the applied field of glaucoma. He developed a practical means for measuring the facility with which fluid can be expressed from the eye.

By means of tonography and related investigations, Dr. Grant has shown that practically all types of glaucoma result from obstruction to fluid outflow.

Further, he was able to pinpoint the site of this obstruction by combining tonographic measurements with microdissection of the trabecular meshwork.

Dr. Grant has received the New England Ophthalmological Society Award for Outstanding Research, the Proctor Medal of the Association for Research in Ophthalmology, and the Knapp Medal of the AMA's Ophthalmic Section. He is the author of the definitive text, *Toxicology of the Eye*.

HMAA Elections

The annual business meeting of the Harvard Medical Alumni Association was held May 26, 1967. Wesley W.

Spink '32, Regent Professor at the University of Minnesota Medical School, took over the presidency of the Association, and Oliver Cope '28, professor of surgery and visiting surgeon at Massachusetts General Hospital, became president-elect.

Those elected to three-year terms as members of the Association's Council were: Carleton B. Chapman '41, Dean, Dartmouth Medical College; John B. Hiekam '40, professor and chairman, department of medicine, Indiana University School of Medicine; and John C. Nemiah '43B, assistant professor of psychiatry and psychiatrist at M.G.H.

Carl W. Walter '32 became treasurer, and William W. Babson '32, secretary.

Family Medicine Fellow

A fellowship program for physicians already engaged in the practice of family medicine has been established by Harvard University with a grant of \$54,000 from the Family Health Foundation of America and with additional support from The Children's Bureau, Department of Health, Education, and Welfare. The grant also will support a collaborative research program in Family Medicine.

The program, begun on July 1, is under the supervision of Joel J. Alpert '56, director of the Harvard Medical School's Family Health Care Program, a cooperative venture established in 1953 with The Children's Hospital Medical Center, the Peter Bent Brigham Hospital and the Boston Hospital for Women.

For the first year, one Fellow will be enrolled in the program. Thereafter, two Fellows will be enrolled annually. James Burdette, M.D. of Knoxville, Tenn., has been selected as the first fellow. Dr. Burdette has been in family medical practice for the past 10 years. He is 42 and the father of four children. He received the M.D. degree from the University of Tennessee in 1952, and entered the private practice of medicine in 1954. He is chief of the department of general practice at the University of Tennessee Memorial Research Hospital. In Knoxville he organized and administered a practical psychiatric program for practicing physicians under a grant from NIMH.

As viewed by Dr. Alpert, the Family Health Care Fellowship will be similar to the sabbatical year in the academic community. It will bring currently practicing physicians back to the teaching center for study and research. At the same time, medical students will be able to work closely with well-trained, academically qualified family physicians.

"There has been," said Dr. Alpert, "a clear need for fellowships in family medicine. These Fellows will work out a program to meet their individual needs. They will participate in our Family Health Care Program, in our medical care research unit, in the collaborative research program, and in teaching students and other Fellows. They may pursue academic courses at HMS, HSPH, and at Harvard University."



Dr. Hill

Lederle Medical Faculty Award

A Lederle Medical Faculty Award has been given to George J. Hill, 2d '57, who is described as "an able, enthusiastic, and well-motivated teacher with high scholarly standards, a surgeon of rapidly developing skills, and an investigator who may be counted upon for notable research contributions."

Dr. Hill is an instructor in the department of surgery at the University of Colorado School of Medicine, and chief resident in thoracic surgery at National Jewish Hospital. His research

interests encompass cancer surgery, immunology, tissue transplantation, renal physiology, and radioisotopes.

Lederle Laboratories bestows the awards to sustain the high caliber of medical education in the United States and Canada by helping young teachers of exceptional promise, between the ages of 30 and 40, remain in academic medicine. Dr. Hill's award consists of \$30,000, which will be paid in three annual installments, to support and encourage his teaching and research.

Markle Scholar in Academic Medicine

In 1927, a Pennsylvania coal operator established the Markle Foundation "to promote the advancement and diffusion of knowledge . . . and the general good of mankind." Today, the chief interest of the Foundation is the program for Scholars in Academic Medicine which seeks to relieve the faculty shortage in medical schools by giving young teachers and investigators academic security and financial assistance early in their careers.

For the seventh consecutive year, there is a Markle Scholar at Harvard Medical School. This year he is Ting-Kai Li '59, associate in medicine in the department of biological chemistry. Dr. Li's research interests center on the

biochemistry, physical chemistry and enzymology of cellular function and differentiation. He has identified the sequence of the peptide at the active site of equine liver alcohol dehydrogenase. In the future, he plans to study the structural enzymology pertinent to developmental biology and the biochemistry of morphogenesis.

Dr. Li interned in medicine at Peter Bent Brigham Hospital and later, was a research fellow in the biophysics research laboratory where he held a Helen Hay Whitney Foundation Fellowship, and also a fellowship from the Medical Foundation of Boston. From 1965-66, he was chief medical resident at the Hospital.

PROMOTIONS & APPOINTMENTS

EMERITUS PROFESSOR

Edwin F. Bland: clinical professor of medicine
John F. Enders: University Professor
Eugene M. Landis: George Higginson Professor of Physiology
Benjamin Tenney, Jr. '25: clinical professor of obstetrics and gynecology

ASSOCIATE PROFESSOR

John Hedley-Whyte: anesthesia at Beth Israel Hospital
Morton N. Swartz '47: medicine at Massachusetts General Hospital

CLINICAL PROFESSOR

Thomas E. Cone, Jr.: pediatrics
Edward A. Edwards: anatomy
Kendall Emerson, Jr. '33: medicine
David Hurwitz '29: medicine
Philip Solomon '30: psychiatry
Louis Zetzel '34: medicine

ASSOCIATE CLINICAL PROFESSOR

Earle McA. Chapman: medicine
David D. Donaldson: ophthalmology
Howard A. Frank: surgery
Krishan K. Kapur: prosthetic dentistry
Johannes P. Kulka: pathology
Harold D. Levine '32: medicine
Charles P. Lyman: anatomy
Benedict F. Massell '31: pediatrics
Elliot G. Mishler: psychology in the department of psychiatry
Joseph E. Murray '43B: surgery

ASSISTANT PROFESSOR

Charles T. Ambrose: bacteriology and immunology
Leonard Atkins: pathology at Massachusetts General Hospital
Howard P. Baden '56: dermatology
Richard D. Berlin '59: physiology
Paul H. Black: medicine
C. Keith Connors: psychology in the department of psychiatry at Massachusetts General Hospital
Daniel Deykin '57: medicine
Paul R. Draskoczy: pharmacology

Laurence E. Earley: medicine
Arthur Z. Eisen: dermatology at the Massachusetts General Hospital
Theodore C. Eickhoff: preventive medicine
Dan G. Fraenkel: bacteriology and immunology
Richard Gorlin: medicine at Peter Bent Brigham Hospital
James A. Herd: physiology
Howard T. Hermann: psychiatry at McLean Hospital
Cliffe D. Joel: biological chemistry in the department of psychiatry
Jerome O. Klein: pediatrics
Lawrence J. Kunz: bacteriology and immunology at Massachusetts General Hospital
Donald B. Martin '54: medicine at Massachusetts General Hospital
Lewis C. Mokrasch: biological chemistry at McLean Hospital
Donald K. Morest: anatomy
Hugo W. Moser: neurology at Massachusetts General Hospital
Nicholas M. Nelson: pediatrics
Madhukar A. Pathak: dermatology
Henry P. Paulus: biological chemistry
Lincoln T. Potter: pharmacology
Sanford I. Roth '56: pathology at Massachusetts General Hospital
Stephen S. Rothman: physiology in Harvard School of Dental Medicine
Edwin W. Salzman: surgery
Joseph J. Schildkraut '59: psychiatry
Christian Schwabe: biological chemistry in Harvard School of Dental Medicine
Stephen M. Shea: pathology
David H. Smith: pediatrics at The Children's Hospital
John D. Stoeckle '48: medicine at Massachusetts General Hospital
David D. Ulmer: medicine
D. Michael Young: biological chemistry in the department of medicine

ASSISTANT CLINICAL PROFESSOR

Milton H. Alper '54: anesthesia
Douglas A. Atwood '46: prosthetic dentistry
William H. Baker: medicine
Samuel Bojar: psychiatry
Phin Cohen: medicine
John P. Connelly: pediatrics
Samuel H. Epstein '27: neurology
John E. Mack '55: psychiatry
Benjamin J. Murawski: psychology in the department of psychiatry

Henning Pontoppidan: anesthesia
 Philip J. Porter: pediatrics
 Robert D. Reinecke: ophthalmology
 Maria Victoria Salam: neurology
 Alfred W. Scott '48: ophthalmology
 James S. Stillman '34: medicine
 David R. M. Van Praagh: pathology
 H. Brownell Wheeler '52: surgery
 Bertram M. Winer: medicine
 Norman Zamcheck '43A: medicine

ASSOCIATE

David H. Alpers '60: medicine at Massachusetts General Hospital
 Barry G. Arnason: neurology at Massachusetts General Hospital
 Thomas P. Ashford: surgery at Beth Israel Hospital
 Dexter M. Bullard, Jr.: psychiatry at The Children's Hospital
 Werner D. Chasin: otolaryngology at Beth Israel Hospital
 Robert W. Colman '60: medicine at Massachusetts General Hospital
 David M. Dawson: neurology
 Richard Galdston '51: psychiatry at The Children's Hospital
 Walter J. Gamble: pediatrics at The Children's Hospital
 Warren M. Gold '59: pediatrics at The Children's Hospital
 Allan Goldblatt: pediatrics at Massachusetts General Hospital
 Harvey Goldman: pathology at Beth Israel Hospital
 David W. Hamilton: anatomy
 Audrey E. V. Haschemeyer: biological chemistry in the department of medicine at Massachusetts General Hospital
 John A. Hobson '59: psychiatry
 Albert L. Jones: anatomy
 Homayoun Kazemi: medicine at Massachusetts General Hospital
 Martin R. Klemperer: pediatrics at The Children's Hospital
 Christopher G. C. LaFarge: pediatrics at The Children's Hospital
 David J. Lang '58: pediatrics at Massachusetts General Hospital
 Ting-Kai Li '59: medicine in the department of biological chemistry
 Ronald A. Malt '55: surgery at Massachusetts General Hospital
 Peter J. M. McEwan: sociology in the department of psychiatry
 Charles F. McKhann: surgery at Massachusetts General Hospital
 Eugene Morkin: medicine
 James C. Orr: biological chemistry
 Paul R. Reich: medicine at Beth Israel Hospital
 Frank F. Richards: medicine at Massachusetts General Hospital
 Dwight R. Robinson: biological chemistry in the department of medicine at Massachusetts General Hospital

Irwin H. Rosenberg '59: medicine
 Charles A. Sanders: medicine at Massachusetts General Hospital
 Peter B. Schneider '59: medicine at Beth Israel Hospital
 Herbert C. Schulberg: psychology in the department of psychiatry
 Richard I. Shader: psychiatry
 Victor W. Sidel '57: medicine at Massachusetts General Hospital
 Clement B. Sledge: orthopedic surgery at Massachusetts General Hospital
 Edward L. Socolow: medicine
 John S. Soeldner: medicine at Peter Bent Brigham Hospital
 Marvin L. Tanzer: medicine at Massachusetts General Hospital
 Samuel O. Thier: medicine at Massachusetts General Hospital
 Dorothy B. Villee '55: pediatrics
 Stanley Walzer: psychiatry at The Children's Hospital
 Merrill K. Wolf: anatomy

CLINICAL ASSOCIATE

Americo A. Abbruzzese: medicine
 Irving P. Ackerman: medicine
 John G. Adams, Jr.: anesthesia
 Henry G. Altman: psychiatry
 Harry K. Bailey: operative dentistry
 Dean Crocker: anesthesia
 Thomas L. DeLorme: orthopedic surgery
 Claes H. Dohlman: ophthalmology
 Robert G. Feldman: neurology
 Thomas P. Hackett: psychiatry
 Arthur P. Hall: medicine
 Hugh H. Kopald '59: medicine
 Richard Masters: dermatology
 Arthur M. Pappas: orthopedic surgery
 Thomas C. Pecbles '51: pediatrics
 Vincent P. Perlo: neurology
 Louis N. Pernokas '50: surgery
 Walter W. Point 3d '45: medicine
 Mary Louise L. Scholl: neurology
 Leonard B. Shulman: oral surgery
 Walter T. St. Goar: medicine
 Jurgen Steinke: medicine
 Melvin Tefft: radiology

LECTURER

Harriet L. Hardy: medicine
 Lorne A. MacHattie: biological chemistry
 Harry L. Mueller '34: pediatrics
 Eva J. Salber: pediatrics



It was September, 1953. The Shattuck Committee had conveyed its recommendations that a Health Service be established in place of the previously existing Hygiene Office to provide comprehensive medical care for the students of the Medical Area. A new first-year student (so new that he was not to register until the next day) came to the new quarters of the Harvard Medical Center Clinic in the Peter Bent Brigham Hospital in search of a doctor. The man on the ladder was obviously not one of the doctors—he was the electrician working on the ceiling lights; the man on his hands and knees was the painter concealing the patchwork linoleum floor with Kelly green paint; the man driving nails into the wall cupboard was the carpenter racing against time to ready the examining room. The student's quizzical eyes spotted two other men busily arranging supplies—but they wore long white coats,—they must be the Clinic physicians.

In October, 1966, the man on the ladder was the electrician working on the lighting; the man on his hands and knees was the painter applying the last coat to the baseboard; the man with the hammer was the carpenter putting the last shelf into the closets; the clean-up man was trying desperately to get some semblance of readiness before the furniture movers should arrive. The scene was the West Wing of Vanderbilt Hall. Down in the Basement, the wait-

ing room of the Medical Area Health Service was crowded with students, faculty, and employees waiting to see one or another of the doctors; every office was in busy use. Outside, the moving men were arriving with their dollies and book boxes. It was a smooth but noisy transition, for only one doctor at a time was required to stop working while his office furniture and equipment was moved upstairs. He would resume his work while the next man was moved.

After 12 years in the pleasant but woefully inadequate quarters in the Peter Bent Brigham Hospital, and a year in the basement of the Deanery, where even the broom closets were put to use for office space, the Medical Area Health Service has moved into its new quarters.

Today the new home is on the first floor of the west wing of Vanderbilt Hall. Access is available from Longwood Avenue as well as from the courtyard of Vanderbilt Hall. This proximity to the students' living quarters has indeed been appreciated by them.

The staff that has been assembled to care for the health needs of the Medical Area consists of medical, psychiatric, and secretarial personnel, with surgical consultation available as needed. James J. Feeney '52 serves in a dual capacity as director of the Medical Area Health Service and as internist. He is backed up by Mark H. Cooley and Herrman L. Blumgart '21, who, though officially

consultant to the service, is in reality one of the strong men of the line. Samuel Bojar, who with George Nichols founded the Harvard Medical Center Clinic in 1953, is the psychiatrist to the Medical Area on a full-time basis. He is assisted by Randolph Catlin, whose home base is Holyoke Center in Cambridge and who gives some of his time to the Medical Area. John R. Brooks '43B is the surgical consultant for the Service. In addition to the professional personnel, a medical assistant performs the clinical laboratory tests and handles the immunization and tuberculosis control procedures. In doing electrocardiograms she is joined by the secretarial staff, whose secretarial skills are supplemented by training in this procedure.

In view of the philosophy of the University that all of its personnel should be offered quality medical care, the patient population eligible for care at the Medical Area Health Service becomes quite extensive. All students in the Medical School, the School of Dental Medicine, the School of Public Health, and the Graduate Division of Medical Sciences are covered upon registration and payment of tuition. Research and teaching fellows in training are required by University policy to participate in the Student Health Plan. They may request waiver of this requirement if they are enrolled in a program that provides comparable hospitalization insurance.

The University operates a Faculty-Employee Health Plan. Those who subscribe to this plan are eligible for ambulatory care as well as hospitalization insurance; those whose appointments or employment places them in the Medical Area turn to this Unit for their care. This segment of the patient population (about 5000) is quite large because of the high faculty-student ratio and the number of employees required to keep the schools operating.

Still another segment of the Medical Area population will be added to the patient roles by September, 1967. The dependents—wives and children—of full-time students in the Medical School, the School of Public Health and the School of Dental Medicine will all be eligible for the Student Health Plan. Under this plan, provisions will be made for the pediatric care under the Family Care Program of the Harvard Medical School at the Children's

Hospital Medical Center. Unfortunately actuarial realities still preclude the inclusion of any prepaid obstetrical plan.

From the time a student arrives at the School, an ever expanding array of diagnostic, prophylactic and therapeutic services are available to him. Initially a physical examination and a psychiatric interview are scheduled for him. These procedures give the physicians of the Health Service a base line against which to evaluate future physical or emotional developments. The staff thus has the opportunity to meet each student and to acquaint him with the facilities and services that are available for his care, and the student has the opportunity to meet those who are responsible for his care, at a time when he is not under the stress of illness or emotional difficulty. The positive advantages of the personal contact that the Medical Area Health Service tries to promote have manifested themselves repeatedly through the years. In addition to these procedures, the immunization status of every student is evaluated and any deficiencies or lapses are remedied.

The diagnostic and definitive therapeutic services offered by the Medical Area Health Service are supplemented by the use of consultants in the medical community. These specialists are drawn from the extensive roles of the University Health Service and also from the Faculties of the several Schools. In this respect the members of the Faculties have been extremely cooperative and helpful to the students and Health Service. This consultation service (upon referral from the Health Service) has provided the students with the very best of medical advice. It has also helped them avoid the dangerous pitfalls of "corridor consultations," which, more often than not, have proven to be unbeneficial to the student.

The psychiatric service is available on an appointment basis (and emergency cases at odd times) for consultation, referral and short-term psychotherapy. Through the years the students have come to view the psychiatrist and the internist as confidants to whom they can turn with all sorts of personal problems—problems that ordinarily might never be brought to a medical office. The axiom, "you don't have to be sick to talk to us" is widely accepted in the Medical Area.

When a student requires in-patient care, consideration is given to whether he should be sent to the infirmary, or to the hospital. Patients who are seriously ill or require surgical procedures are naturally admitted to a hospital; otherwise the pleasantly appointed, well-staffed, and well-equipped Stillman Infirmary on the 5th floor of the Holyoke Center is used. When any student of the Medical Area is in the Infirmary or the hospital, our staff continues to care for him. The occasional student who might need in-patient care for emotional reasons is usually sent to the Stillman Infirmary unless it is felt that he should be admitted to one of the local mental hospitals. Fortunately the need for such hospitalization has been infrequent among the patient population of the Medical Area Health Service.

As part of a preventive medicine program, each student is screened annually for tuberculosis during the two pre-clinical years and twice a year during the clinical years. In a similar program, the Health Service carries out the University requirements that all officers of instruction and administration and also employees must be screened for tuberculosis once every three years. A tuberculin test is done and if positive, is followed up by a chest X-ray. In view of the exposure to various "childhood diseases" while on the pediatric wards, a detailed history of mumps and measles is obtained at the time of the initial examination.

Skin testing for mumps is done if the history is negative or questionable, and if indicated, the student is immunized for this disease. This procedure has served to prevent many days of crisis in the event of later exposure. Similarly, students who have a negative history for measles are immunized for that disease.

The performance of pre-marital examinations for students is quite a popular function, since well over 40 per cent of the student body is married. (The fact that pre-marital examinations are included in the Preventive Medicine Program should not be taken to indicate that we consider marriage a condition to be prevented.)

International travel has expanded greatly and as the number of students traveling overseas has increased, our program of immunization has become more and more active. The Health Service also cooperates with the Human Studies Review Committee and assumes an active role in the screening of all requests to use students as experimental subjects.

All the staff members of the Medical Area Health Service hold faculty appointments and each participates in the teaching activities on the hospital wards, in the clinics, and in the classroom. We firmly believe that the teaching functions of our unit are an important facet of our mission and many of the student visits to the Health Service become a teaching session for them and for us.



